

# ENGINEERING AND SCIENCE

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## The Professional Engineers' Registration Act

**T**HE PROPOSED Professional Engineers' Registration Act, recently introduced into the California State Assembly where it became Assembly Bill 1930, would make any person guilty of a misdemeanor and subject to a fine of \$100 to \$500 if he engages in the practice of professional engineering without having been registered as provided by this Act, unless he is exempt from registration.

One of the first questions asked about the proposed act by an engineer is whether he is included among those who must be registered. The phrase "practice of professional engineering" is so broadly defined by the bill that no Tech man should entertain any doubts regarding his inclusion so far as this phrase is concerned. Either he is clearly not included because his work is definitely non-engineering in character or he is included by the definition.

The engineer should look closely at this bill if it would make him guilty of a misdemeanor in case he continued working as at present. He may, of course, avoid committing a misdemeanor by registering as a professional engineer. But let us consider the import of the phrase "unless he is exempt from registration." There are two broad exempt classes: first, engineers whose practice does not affect the health and safety of persons, and second, engineers who do not assume responsible charge of work. The first class probably does not exempt as large a fraction of engineers as the second. It appears that work such as evaluation and planning would not affect personal health or safety, but that work such as design and supervision of construction would affect health and safety and would therefore be involved. Members of the second exempt class, subordinate engineers, probably far outnumber supervisory engineers. Altogether it appears that those exempt from registration far outnumber those who must register.

It is conceivable that in a large group of engineers reporting through organization lines to a chief engineer, only the chief engineers would be required to register. However, if a subordinate engineer signs drawing specifications as final approval before construction which might affect personal health or safety, it appears that he would be required to register.

In small organizations where one engineer is in full charge of engineering it appears certain that he would be required to register.

As the bill facilitates registration of those who have practiced professional engineering for some time, there should be no reluctance on the part of present engineers to approve the act for fear they would have difficulty passing registration examinations.

Proponents of the proposed act argue, among other points, that it will aid in safeguarding health, life, property and public welfare by giving the public a minimum standard by which to judge engineering competence and by prohibiting persons of lesser qualifications from offering engineering service to the public. They cite, as an example, the case of Robert Magee who posed as a chemical engineer and, through mishandling of a large quantity of perchloric acid, caused one of the most deadly and property-destructive industrial explosions in the history of Los Angeles when the O'Connor electro-plating plant was destroyed in February. Had the proposed Registration Act been functioning before he was hired, Mr. Magee would have been asked to produce evidence of his registration in qualifying for the position. The act's proponents state that he would have been unable to meet the requirements for registration, his incompetence would have been recognized, and he would not have attained the position of responsibility and trust which permitted him to destroy 14 persons and property worth hundreds of thousands of dollars.

Opponents of the proposed act answer this argument by saying, first, that it would not eliminate incompetence, and second, that misuse of technical competence might still injure the public interest. In answer to the first argument, there is considerable reason to believe that incompetence in responsible positions would be greatly reduced by the act, if not eliminated. Undertakings requiring legal permit would require approval of a registered engineer and experience shows that such approval would become important for projects not legally requiring it. As the re-

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influence with members of the Senate, the tradition of having amateurs is renewed at each election. Retired manufacturers, wealthy industrialists, and defeated legislators are given posts abroad as rewards for campaign contributions. Their service has usually been mediocre, but sometimes a Charles Francis Adams turns up. More often, however, the nation is bewildered by its diplomats. Sudden disclosures from them regarding the behavior of subordinates keep the State Department on its toes, but are not conducive to a well disciplined administration. Recently the abrupt report of subversive actions of Americans in China excited the nation; the Ambassador's accusations found a hearing in Congress; the only result of his report and the investigations thus far has been the Ambassador's nomination as a candidate for the United States senatorship of New Mexico. Thoughts of politics at home too often dominate the actions of diplomats abroad. Too many quit their posts in fits of anger in order to patch political fences at home. Another phenomenon recently has disturbed the nation. Ex-diplomats have been prophets of doom.

But the amateur diplomat is not alone in keeping the nation embarrassed. His wife and children lend color to our international relations. The wife of Norval Richardson, secretary of our embassy in Rome, reportedly waved the American flag, threw kisses, and offered roses to Italian soldiers during the period of our neutrality in World War I. When warned of her actions, she replied: "The United States may be neutral, but I want the whole world to know that I am not. Viva Italia."

The demand for better administration of foreign affairs brought the Rogers Act in 1924 and the Moses-Linthicum Act of 1931. These laws set up civil service requirements and automatic salary advances, and included benefits of annual leaves and retirement. But the staffs of our legations remained inadequate, and for years we had an average of two people at each of our 318 posts. Since the beginning of the war, college professors, industrial experts, and scientists have been added to the staffs to permit expert observation. Information services in particular were helpful in bringing accurate news. The legation in Copenhagen even arranged for expense-free trips of Danish journalists to this country in order that their news reports might reflect a truer picture of American principles. The Department of State also has invited experts from universities and industries to staff its divisions. However, both in the field and at home these experts have been leaving their posts for more rewarding and non-political positions in education or industry.

President Truman recently has attempted to reform the foreign service. He would have Congress pay salaries commensurate with the value of intelligent diplomacy to the nation—taking the service out of the luxury class of industrial magnates and putting it into the hands of the professionals. He advocates a university, or training center, for people interested in foreign affairs, where special instruction in foreign policy and international law could be offered so as to qualify them for diplomatic service. The president made no recommendation for improving the Senate. The workings of this cumbersome body obviously need serious consideration. Some reformers believe that a straight majority vote on all questions concerning treaties and foreign agreements would be

a satisfactory solution. This would prevent at least a minority from tying up foreign decisions.

Obviously, a national center for the study of American foreign policy would make the Senate more responsive and enable the president to secure better appointments. This metamorphosis certainly should reflect also in our international outlook. Its present immaturity might give way to thoughtful understanding. Eventually attention to the formulation of international policy also should bring stability, the desire to think in terms of principles, and a willingness to measure crises in the light of international policy.

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quirement or the benefits of hiring registered engineers became established, the chance of placing incompetent persons in responsible positions decreases and the hazard to persons and property decreases. Any injury to persons or property resulting from technical incompetence after the proposed act becomes law will emphasize to the public and employers in California the benefits of hiring engineers whose competence is established by registration. In a corresponding field, we would not tolerate an unlicensed person's practicing medicine or surgery.

In rebuttal of the argument by opponents that technical competence might be used against the public interest it can be said that an engineer who has a record of such action would not be registered and therefore would not be permitted or asked to approve engineering projects of consequence. This and the fact that all present safeguards against misuse of technical competence could be continued indicate that passage of the bill into law would decrease the misuse of technical competence.

The proposed act, although holding no promise of putting a sudden end to misuse of technical competence, does hold promise of reducing hazards resulting from technical incompetence.

As the greater competence of registered engineers becomes recognized through operation of the act, the standing in the community and in industry of the registered professional engineer will be improved. This effect ultimately will be reflected in greater community leadership and in greater remuneration for professional engineers.

The proposed act has been prepared jointly by the Los Angeles Engineering Council of Founder Societies and the San Francisco Engineering Council after a number of years of study of the questions involved. This action has been sufficient to warrant its support by many engineers. Other engineers who have not wished to support it on this basis have, through careful study, become convinced that they should support it.

It is recommended that all alumni now engaged in engineering either support the proposed act because of their faith in the engineers who have secured its preparation or that they study it carefully to determine whether they individually favor or oppose the proposed act.

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