BUT ARE YOU REALLY A PROFESSIONAL?\(^1\)

Or is the concept of professionalism embodied in the traditional professions obsolete and meaningless for today’s engineer?

by Marlene D. Dixon\(^2\)

Engineers worry a lot about the professional status that they believe they have, but that the public does not seem willing to grant them. Why, they ask, do doctors and lawyers acquire full professional status in the eyes of the public almost automatically along with their degrees? Why is this so even when the doctor, the lawyer, the clergyman, the teacher, the architect, and the military man is a salaried employee of a large organization? Yet, even when he is in private practice, the engineer is usually considered a professional by his colleagues only, not by the public at large, which thinks of him as just another businessman.

Research into the nature of professions and occupations has grown recently, but investigators have dealt primarily with the "free" professions—medicine, law and the clergy—even though no group is more important to these studies than the burgeoning corps of salaried engineers and scientists. The result is that we do not fully understand these newer, salaried professions. A major reason for our ignorance could be that the very nature of professionalism itself is changing to meet new conditions, the most important of which are salaried employment and loss of the personal client. Even within the "free" professions today, more and more practitioners are salaried.

To understand better the consequences of changes in modern professional practice, we should first look at the characteristics of the traditional "free" professions. Their nature was not created by fiat, but grew out of the way in which the entire profession was organized, usually over a long period of time. There was a typical pattern to this development. The first requirement was that trained members of the occupation were able to claim an expert knowledge (healing the sick, skill in the intricacies of the law, ability to translate the meanings of God’s will) which was unique to them and beyond the understanding of laymen.

Once the public recognized this claim to expertise, practitioners could then claim that only they could judge properly the value and competence of their own expert performance. They had then prepared the ground for professional autonomy, since the members of the occupation were recognized as the only people able to police, to reward and to teach the occupation’s skills. The American Medical Association or the American Bar Association exemplify such autonomy.

Finally, there developed a widespread recognition of professional authority, which permitted the professionals to exercise direct control over the nature and quality of their services. We see this professional authority in the physician's control over the treatment of his patients, and in the attorney's right to dismiss clients who refuse to cooperate or insist upon telling the attorney how to argue the case.

The public never has recognized professional authority unless it could be policed and there was clear evidence of altruistic or public-service motivation on the part of the profession and its practitioners. In gaining such recognition, the process of professionalization often resembled a missionary social-reform movement. For example, it was not until the great medical reform movement early in this century that the public granted full professional recognition to U.S. medicine. The reforms that made medicine respectable were possible only through the physicians' organization—their professional association—working with the government, which delegated police powers to the profession and guaranteed professional standards by writing them into law.

The result of this process is that today a profession is an occupational group that has the right to recruit, train, license, reward and punish practitioners; has the power to set standards, define goals and control professional work independently of the client; and can demand proper conduct and enforce it by expelling offenders. These are the prerogatives that give extraordinary power to modern professions and provide maximum freedom for individual professionals.

It is this all-inclusive definition of professionalism that engineers mean—and that concerns them—when they worry about their professionalism or lack of it. Another definition of the (continued page 11, column 2)

\(^1\) Reprinted from the January-February 1968 issue of Engineer, a publication of Engineers Joint Council, New York. Copyright by Engineers Joint Council 1968.

\(^2\) Assistant Professor of Human Development and Sociology, University of Chicago.
EDITORIALS

DISPLAY BOOTH

Annual meetings for geologists or those with geological affinities appear to be a way of life. The Geotimes calendar of events lists a continuing succession of meetings covering the entire geological spectrum, with hardly a breathing spell even during the summer. A geologist with a consuming passion for keeping current in his profession could spend nearly all his time traveling from one meeting to the next, and in many cases back and forth.

The vitality and effectiveness of AIPG depend upon its members. The growth of the membership, both in numbers and in its programs, is fundamental to the success of AIPG, and all those who are deeply involved in the organization are dedicated to the work of enlarging its membership rolls. For example, Past Presidents Ben H. Parker and Allen C. Tester have written individual letters to each qualified alumnus of the Colorado School of Mines and The University of Iowa, respectively, to call attention to AIPG, recount its purposes and virtues, and encourage new applications for membership.

The display booth at a geological meeting is one of the most effective means of demonstrating the attributes of AIPG, of appealing to the professional instincts of geologists, and of recruiting new members. Although there may be less reason for having such booths at meetings involving petroleum geologists who, as a group, are probably better acquainted with AIPG than other geologists, they are still desirable at all types of geological meetings, for it can be seen at a glance that the membership of AIPG is quite small in comparison with the total number of geologists practicing in the United States.

The meetings printed in Geotimes calendar are probably attended by fully one-third of the total geological community in the United States. As a means of advertising its wares, AIPG should have a booth at each of these meetings of any consequence, and that booth should be manned at all times by local AIPG personnel. Because of geographic considerations, State Sections should be responsible not only for staffing these booths, but also for financial and other arrangements.

In those cases where Sections have not been formed, AIPG headquarters stands ready to offer financial assistance as well as advice to be sure that important meetings are complemented by AIPG's presence.

Like the Chinese water torture treatment, the more times AIPG appears in the geologic eye, the more impressive the organization will loom in the memories of geologists. At this stage in its development, AIPG is in no danger of over-exposure.

1988 ELECTIONS

Section 1 of Article IV of the AIPG Code of Ethics states, "A Member shall not falsely or maliciously attempt to injure the reputation or business of another." A corollary of this maxim may be derived, "A Member shall not extol the reputation of one Member to the detriment of another." The corollary has particular significance in an election year.

Many professional organizations have suffered the throes of politics at election time, and geological groups are no exception. AIPG, whose sole interest and rationale is professionalism, should be above the level of politics in its elections. Otherwise its protests of altruistic conduct become a mockery.

Political activism, for the most part, is motivated by the parochial or personal interests of an individual. Such chauvinistic behavior should not be allowed to infect other members. A member should be free to decide between candidates from the information published in The Professional Geologist.

TSUNAMI CATALOG

The preliminary edition of an extensive catalog of tsunamis of the Pacific Ocean and adjacent seas by Kumzi Iida, Doak C. Cox, CPG, and George Pararas-Carayannis has been published by the Hawaii Institute of Geophysics as Data Report No. 5 (HIG 67-10) with accompanying bibliography, Data Report No. 6 (HIG 67-11). Although the catalog includes many tsunamis not found on previous lists, and discards many found on previous lists as invalid, the present catalog is regarded as preliminary pending review by tsunami researchers around the Pacific Ocean. Those interested in receiving copies should communicate with: The Editor, Hawaii Institute of Geophysics, University of Hawaii, 2525 Correa Road, Honolulu, Hawaii 96822, U.S.A.

NATIONAL ASG MEETING

The 11th annual National Meeting of the Association of Engineering Geologists will be held in Seattle, Washington, October 22 through 26, 1988. The meeting will be at the Olympic Hotel and will be hosted by the Washington State Section. Theme of the technical program will be "Reservoir Leakage and Ground Water Control." For further information concerning this meeting, please contact: Association of Engineering Geologists, Annual Meeting Committee, Box 246, Seattle, Washington 98111.
Lack of unity is one of the serious problems of geology. It results in geology's loss of identity as a science by its fractionation into specialties. Specialization is just as necessary to geology as to medicine, for example. Medical specialties, however, are subordinate to the broad field. This condition produces strength. Unfortunately, the geological specialties supersede the broad field. This condition undermines strength. It also prevents geologists from attaining a high level of public esteem.

Geologists should have the same order of esteem as that which the architectural, engineering, legal, and medical professions have long and deservedly enjoyed. Most people have little comprehension of the number of indispensable services geologists have performed for them. Services which geologists can and must perform for people in the future dwarf, by comparison, those which they have already performed. These new services range from solving problems of the environment to exploration of the planets, and finding fossil energy and minerals below the bottom of the oceans. They are tasks equally as glamorous as those accomplished in space by the physicists, and they are considered the aristocracy of the scientists.

We're proud of our occupations as geologists. There's always been a common bond among us, irrespective of specialty, geography or station. We must find more, faster and better ways to cooperate and conquer our problems, or we soon will find our problems conquering us. Some of us are faced with state licensing or registration. We must have a united front whether we are to have laws of our own design, administered by our geological peers, or no laws at all.

It is essential to our survival and progress that we accept the fact that we live in a period of unprecedented and rapid change without end in sight. Revolutionary, unprecedented problems call for unprecedented answers. The solution to the problems does not lie alone in theoretical examination and abstract discussion. It lies in the planning and working relationships in which the know-how and resources of business and/or government is combined with the research and the interpretation of scientists which is coordinated and integrated into a unified whole concept. This is a team effort. It requires unity of purpose to accomplish. Likewise, a team effort is necessary for geologists and specialists of other disciplines to bring a new oil pool, a new mine, or a new community into being.

Since geologists' cooperation with members of professional organizations of diverse disciplines is becoming necessary to accomplish the goals of society, it is also becoming necessary that the competence and integrity of each of the cooperating disciplines be compatible. This produces unity between these professional disciplines, even though there may be some clash at the boundaries. Why then should there not be unity among specialties of our discipline—geology?

If we, as geologists, are to meet the greatly multiplied challenges of change that are on the horizon, we must minimize the lapse between the evolutionary needs of society and our response. After the end of the Vietnam war when an escalation of spending can be expected, imaginative ideas worthy of new financing will be desperately needed. These will have to be fought for, if they are to prevail against entrenched lines of thinking and often wasteful experimenting which is sometimes more concerned about flashy publicity than worthwhile consequences.

Where can geology's share of the escalated spending show the most effective result? We must have plans made before this time arrives. The Chairman of the United States House of Representatives Subcommittee on Science and Aeronautics has already publicly asked for advice from professional societies on the priorities that must be established by the Congress in such matters. We must be united in purpose so as to stand and be counted!

With unity among increasing numbers of qualified geologists, geology has the potential of becoming a leading and esteemed profession. Without unity geology can continue to exist only as a number of scientific specialties -- it cannot maintain the identity of a recognized and united profession. Geology is our profession to work for and make strong. We are moving forward. The AIPG effort to create an esteemed profession must, therefore, continue to flourish and proliferate.

Laurel Mountain, Pennsylvania
4/9/68
John T. Galey
President

SECTION NEWS

CALIFORNIA

The ensuing literary exchange typifies the current conditions of geological licensing in California.

(1)

"JOINT RESOLUTION OF "THE GEOLOGICAL SOCIETY OF AMERICA AND "SOCIETY OF ECONOMIC GEOLOGISTS "WHEREAS, THE GEOLOGICAL SOCIETY OF AMERICA (PACIFIC COAST SECTION) and the SOCIETY OF ECONOMIC GEOLOGISTS (CALIFORNIA CHAPTER) have reviewed Assembly Bill No. 600, known as the Geologists Act, and "WHEREAS, it is believed that the passage of Assembly Bill No. 600 would be inimical and detrimental to the geologic profession, and "IT IS HEREBY RESOLVED that THE GEOLOGICAL SOCIETY OF AMERICA and the SOCIETY OF ECONOMIC GEOLOGISTS SHALL:
1. Express to the Committee on Governmental Efficiency and Economy of the State Assembly our opposition to Assembly Bill No. 600, and
2. Designate one committee member from each organization to present testimony at the Governmental Efficiency and Economy Committee hearing, and
3. Send copies of this resolution and a copy of the GSA-SEG committee report to the Honorable Ronald Reagan, Governor, and to all Assemblymen and Senators."
"THIS action taken the 14th day of March 1968.

/s/ Robert V. Stone, Chairman
A. B. Cooksley
Howard Shelly, Jr.
Max Bookman
Robert V. Bevansky
Sid J. Mann
James M. McManus
Arthur Campbell"

GSA-SEG Joint Committee
Univ. of Southern Calif.
Los Angeles, Calif. 90007

(2) "The Honorable William M. Ketchum March 22, 1968
California State Assembly
State Capitol
Sacramento, California 95814

"Dear Mr. Ketchum:

"The chairman of the Legislative Committee of the California Section of the American Institute of Professional Geologists, Mr. Jay Marks, has just provided me with a copy of a rather curious and somewhat distressing document that bears on your bill, A.B. 600 for registration of geologists.

"This document is entitled: 'Joint Resolution of the Geological Society of America and Society of Economic Geologists.'

"It presumably is being circulated to all Assemblymen and Senators to indicate the opposition of a 'GSA-SEG Joint Committee' to A.B. 600. The statement is signed by a Robert V. Stone, as chairman, and by seven other names, none of which is to be found in either the latest Geological Society of America or Society of Economic Geologists directories.

"As president of GSA since November 1967 (and as vice-president for the preceding year) I can assure you that no such 'joint committee' was ever authorized -- much less appointed. Moreover, within the body of the 'resolution,' reference is made to a 'Pacific Coast Section' of GSA. There is no such section. There is reference also to a 'California Chapter' of SEG. I am not an officer of SEG, but I have been a member of the Society for over 30 years. I have never heard of a 'California Chapter.' I doubt its official existence.

"In view of these facts, one can only conclude that the documents that are being distributed under these titles and over these (apparently fictitious) signatures are without authenticity and should not only be disregarded -- they should be thoroughly discredited. I can interpret this material in only two ways. (1) As a misguided prank on the part of some perhaps somewhat inebriated persons. Or (2) as a deliberately mischievous attempt, on the part of some unqualified practitioners, to prevent passage of a bill designed to save the public from just such people.

"In any event, the misappropriation and the misuse of the name of two of the most respected societies in the whole field of the earth sciences has done a disservice to the entire profession and is, moreover, an insult to the California Legislature. If anyone representing himself to be in any way associated with these documents makes an appearance before the Legislature and can be identified, I would be grateful for his name and address. It would be my intention to turn the infor-
mation over to our legal counsel for whatever action might be appropriate.

"In conclusion, I should like to state that the Geological Society of America, as a matter of long-standing policy, does not enter into any political or legislative matters, either at the Federal level or in any of the States.

Sincerely yours,
/s/ Ian Campbell
President
Geological Society of America"

(Emphasis added - Ed.)

In addition to the fraudulent resolution prepared by the "phony" GSA-SEG Joint Committee, other spurious telegrams were received by members of the California State Legislature. In particular Dr. Gordon B. Oakeshott, CPG, purported to object to the passage of AB 600. The enormity of this message was that the same Dr. Gordon B. Oakeshott had, in fact, already endorsed AB 600 in both oral and written communications. In another quarter, the Santa Barbara County Board of Supervisors had cabled the Assembly that they were arrayed against the bill. An inquiry from Assemblyman Ketchum proved that this message also was entirely false, that the Santa Barbara County Board of Supervisors had indeed not adopted the resolution which had been transmitted. Detective work later by the Burns Detective Agency which AIPG has retained disclosed that this telegram not only was a fraud but also had been charged against the account of Santa Barbara County. In all, a total of eleven faked telegrams and other messages have been counted so far.

The only formal and responsible opposition to AB 600 at the time of its recent hearing before the Assembly Committee on Governmental Efficiency and Economy was lodged by the Los Angeles Section of the Association of Engineering Geologists and a representative of a small group known as the "Consulting Engineering Geologists." The argument made by these groups was that AB 600 would not provide the public with as thorough "protection" as the presently effective ordinances of many local jurisdictions now provide. To understand that argument, three passages from the Los Angeles County Engineering Geologists Qualifications Board Instructions are cited:

"Authority: . . . All geological reports regarding residential development submitted to Los Angeles County . . . must be signed by an Engineering Geologist approved by the Board.

"Minimum Requirements for Applicants:
(1) Degree in geology or equivalent as evaluated by the Board.
(2) Three years of responsible work . . .

"Examination for Certification: Applicants fulfilling minimum requirements must pass an oral examination by the Board."

And from Los Angeles County Ordinance No. 4099, Article XXXI, Engineering Geologist Qualifications Board, Section 464:

"The Qualifications Board shall also serve as a Board of Review to provide for interpretation of data, opinions,
conclusions or any one or more thereof included in and adequacy of geological reports."

Need more be said?

Interestingly enough, the Los Angeles Section of AEG appears to be a renegade offshoot from the main body of that organization, in that the Chairman of the AEG national Legislative Committee, Wilford W. Peak, had earlier communicated his approval of AB 600 to Assemblyman Ketchum, thus reflecting broader AEG opinion. Indeed, Mr. Peak has reaffirmed his support of AB 600 since its initial hearing.

On March 27, 1968, the Assembly Committee on Governmental Efficiency and Economy, apparently "spooked" by the fraudulent telegrams and other messages which it had received, postponed decision upon AB 600 and continued the hearing until April 17, 1968. On that date, not only will AIPG represent the geologic profession, but also Dr. Ian Campbell, State Geologist of California, will appear to make a presentation on behalf of the adoption of the bill as being vitally needed to protect the public health, safety and welfare of the people of California.

COLORADO

The Colorado Section of AIPG, together with other geological groups in the Denver area, is planning a conference to be held in the spring of 1969. This meeting, hopefully to be sponsored by Governor Love, will be designed to bring together Colorado geologists, city and county planners, construction and development people, architects, engineers, and others whose activities involve the utilization and development of the human environment. The purpose will be to foster further understanding among these groups regarding ways and means for the most effective application of geologic knowledge in their respective fields to the end that natural resources of all kinds may be most efficiently and safely developed.

IOWA

The Iowa Section held a dinner meeting February 9 at Mount Vernon. President Hendricks discussed the activities of major committees and called attention to the constant problem of Institute membership. Progress in this latter connection will proceed along lines which have been so successful in Oklahoma and elsewhere. Teams of two members will call on qualified individuals who will receive later visits by other members, in the event the first call is unproductive. In other matters of business, the group decided to support the present Institute by-laws which require two candidates for each elective office of the Institute, and to oppose the creation of a second grade of membership in the Institute.

LOUISIANA

The Louisiana Section has just made a series of committee appointments similar to those of the National Executive Committee. Committees of particular importance are Ethics, Geologic Hazards, Professional and Scientific Standards, Public Relations and Publicity, Relations with Governmental Agencies, Statutory Regulations and Legislation, and Professional Employment Standards. These committees will be alert to developments in Louisiana concerning the professional practice of geology.

Following a recommendation from the National Institute's Publicity and Public Relations Committee Chairman, the Louisiana Section intends to establish a speaker's bureau, to prepare a list of members who are willing and able to speak before technical and nontechnical groups on professional geologic matters.

MISSISSIPPI

The Mississippi Section, like virtually all other elements of AIPG, is preoccupied with geological hazards. The most recent matter of interest to the Section was a leaky 15 million gallon water storage reservoir serving the City of Jackson. Fred F. Mellen, CPG, sent reports appearing in the Jackson Clarion Ledger concerning the reservoir to all those in the Mississippi Section interested in the affair, as well as to representatives of AIPG's Geologic Hazards Committee.

TEXAS

The Texas Section has suggested a program to be implemented by its Public Works Committee pertaining to the establishment of a committee to advise State and local governments on geological matters. It is envisioned that such an advisory committee would provide liaison with governmental bodies not only to contribute to the welfare of the committee, but also to acquaint the general public with many facets of the geologic profession. The committee would not compete with any State organization, but would cooperate and work with them. It is not contemplated that the committee would serve to replace or compete with consultants.

Another program conceived by the Texas Section was the formation of a State Parks Committee to offer its services to the State Parks Board, so that a more adequate description of the geology could be prepared for the various State parks. Mr. J. R. Singleton, Executive Director of the Texas Parks and Wildlife Department, has accepted the Section's offer of assistance and a committee is presently carrying out this program.

COMMITTEE REPORT ON PETROLEUM GEOLOGICAL EMPLOYMENT BY PROFESSIONAL EMPLOYMENT STANDARDS COMMITTEE*

The Committee on Professional Employment Standards of the American Institute of Professional Geologists was assigned the general objective of studying, and recommending remedial actions, for employment conditions that might have adverse effects on either the professional stature of geologists or the ability of geologists to earn a living through the practice of their profession.

The first step has been a program of fact finding. Inquiries are being made to company employees in engineering, petro- leum, and mining, to independent consultants, and to persons who have left the geological profession in recent years.

*Chairman: E. L. Klinitsky; Members: Gordon W. Gulmon, Linn Hoover, Roy L. Ingram, E. Burton Kemp III, George M. Knebel, William H. Park, Ben H. Parker, Miles T. Rader, Jr.
The following summary is based on returns from a questionnaire mailed to consulting petroleum geologists in the United States. Over 2500 consultants are listed in the membership directory of the American Association of Petroleum Geologists. Of these, 1000 were selected at random to receive a questionnaire. Replies were returned by 345 persons. Following is a tabulation of their response:

1. Age of consultants:

<table>
<thead>
<tr>
<th>Range in years</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34</td>
<td>36</td>
</tr>
<tr>
<td>35-44</td>
<td>35</td>
</tr>
<tr>
<td>45-54</td>
<td>28</td>
</tr>
<tr>
<td>55-64</td>
<td>19</td>
</tr>
<tr>
<td>65 and older</td>
<td>15</td>
</tr>
</tbody>
</table>

2. Education:

<table>
<thead>
<tr>
<th>College degree</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>3</td>
</tr>
<tr>
<td>Bachelor</td>
<td>65</td>
</tr>
<tr>
<td>Master</td>
<td>27</td>
</tr>
<tr>
<td>Doctor</td>
<td>5</td>
</tr>
</tbody>
</table>

3. Experience:

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Total Experience (average in years)</th>
<th>Consulting Experience (average in years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>35-44</td>
<td>16</td>
<td>7</td>
</tr>
<tr>
<td>45-54</td>
<td>23</td>
<td>11</td>
</tr>
<tr>
<td>55-64</td>
<td>35</td>
<td>17</td>
</tr>
<tr>
<td>65 and older</td>
<td>46</td>
<td>18</td>
</tr>
</tbody>
</table>

Only three persons reported that they had never worked for a company. An overwhelming majority have many years of prior company experience.

4. Current yearly earnings from consulting:

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Median Income</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34</td>
<td>$8,000</td>
<td>$3,000–24,000</td>
</tr>
<tr>
<td>35-44</td>
<td>5,000</td>
<td>0–30,000</td>
</tr>
<tr>
<td>45-54</td>
<td>4,000</td>
<td>0–50,000</td>
</tr>
<tr>
<td>55-64</td>
<td>3,000</td>
<td>0–35,000</td>
</tr>
<tr>
<td>65 and older</td>
<td>1,000</td>
<td>0–40,000</td>
</tr>
</tbody>
</table>

The above figures, and the figures below, represent net income, though some of the correspondents may have indicated their gross earnings. It was indicated that a consultant needs to earn $30,000 to $35,000 gross in order to live as well as a company-employed man earning $15,000.

5. Current yearly earnings from royalties and income-producing properties:

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Median Income</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34</td>
<td>$2,000</td>
<td>$0–11,000</td>
</tr>
<tr>
<td>35-44</td>
<td>3,000</td>
<td>0–100,000</td>
</tr>
<tr>
<td>45-54</td>
<td>3,000</td>
<td>0–85,000</td>
</tr>
<tr>
<td>55-64</td>
<td>6,000</td>
<td>0–75,000</td>
</tr>
<tr>
<td>65 and older</td>
<td>3,000</td>
<td>0–120,000</td>
</tr>
</tbody>
</table>

6. Other sources of income:

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Consultants who have other income (Percent)</th>
<th>Consultants who have no other income (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25-34</td>
<td>33</td>
<td>67</td>
</tr>
<tr>
<td>35-44</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>45-54</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>55-64</td>
<td>65</td>
<td>35</td>
</tr>
<tr>
<td>65 and older</td>
<td>80</td>
<td>20</td>
</tr>
</tbody>
</table>

7. Reason for leaving company employment to enter consulting:

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terminated by company</td>
<td>21</td>
</tr>
<tr>
<td>Voluntarily resigned</td>
<td>73</td>
</tr>
<tr>
<td>Retired</td>
<td>6</td>
</tr>
</tbody>
</table>

8. Is reemployment by a company desired (at a level commensurate with age and experience)?

<table>
<thead>
<tr>
<th>Desired</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>33</td>
</tr>
<tr>
<td>No</td>
<td>62</td>
</tr>
<tr>
<td>Undecided</td>
<td>5</td>
</tr>
</tbody>
</table>

9. There are over 2500 consulting petroleum geologists. Are there sufficient activities for this number of practitioners?

<table>
<thead>
<tr>
<th>Desired</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>26</td>
</tr>
<tr>
<td>No</td>
<td>69</td>
</tr>
<tr>
<td>Do not know</td>
<td>5</td>
</tr>
</tbody>
</table>

10. How many consultants could be gainfully employed (opinion)?

<table>
<thead>
<tr>
<th>Number of consultants</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1,000</td>
<td>17</td>
</tr>
<tr>
<td>1,000 to 2,000</td>
<td>28</td>
</tr>
<tr>
<td>Over 2,000</td>
<td>21</td>
</tr>
<tr>
<td>No opinion</td>
<td>36</td>
</tr>
</tbody>
</table>

**COMMENTS**

Half of the returns contained comments and expressions of opinions, some at great length.

It was pointed out that "Consultants" include a considerable variation in activities. There are "Independents," who make their living by developing production, others who put together prospects for fees and an override, and others who provide studies and advice on a fee basis. For many the activities overlap and there are many degrees of qualification and adaptability. Also, there are many people who have become consultants only because their "jobs slid out from under them." These people generally lack sufficient capital and know-how to become successful. It was indicated that they stay on as consultants for a few years and then turn to something else. The ones who did not make it and are selling shoes must have dropped their AAPG affiliations because the survey heard from almost none of this general class. In addition there has been a scarcity of risk capital in recent years that has affected all operations. These complexities make it difficult to evaluate the potential for consultants in general terms. There is some feeling that first-class consultants are in short supply. There is also a feeling that the field needs to be defined and
legally protected, as some duties that should be performed by geologists are being performed by lawyers and engineers. It was further observed that the rosy picture of the future need for more geologists, expressed in certain publications, is over-
optimistic (some used such words as "garbage").

The degree of resiliency in the less successful is great. Only four express resentment or bitterness.

Six people complain about "moonlighting" by major com-
pany geologists. Many correspondents pointed out that, with certain exceptions, a geologist cannot expect to make a living on purely consulting work on the basis of fees. Such fees are usually $100 per day, but it is reported that there has been undercutting of fees to as little as $25 per day.

The consultant's only prospect of success is in developing an interest in production. In this sense, most consultants are primarily promoters and peddlers. One correspondent estimated that a successful geologist normally can create and sell about three deals per year and that he spends 15 percent of his time creating and 85 percent selling. Most geologists do not want to be peddlers, but there is no room for them in consulting unless they can be.

There is criticism that some consultants are, on the whole, not very objective. Many have worn out their sources of capital through promotion of worthless prospects, and some are simply not able to do the original thinking that leads to finding oil fields. These conditions have additionally aggravated the general shortage of capital so that there are declining oppor-
tunities for all consultants. For some, there is need to control disreputable or unethical operators. For many, a remedy is to have more money flow into exploration activities. To some extent, the low expenditures for exploration are attributed to low prices paid to producers of gas and oil.

CONCLUSIONS

The consulting field in petroleum geology appears to be greatly overcrowded, and it is unable to provide a decent living for the majority of its practitioners.

A third of the consultants apparently would like to obtain company employment. They have considerable experience, and the majority still have many years remaining of potential professional activity. Most had left of their own accord, possibly through motivations of greater initiative than others who remained. If the sampling is representative, there is a pool of over 800 such geologists available to companies for reem-
ployment. It would seem that the talents and experience of these men should be utilized in preference to training more new geologists.

The consulting field needs to be studied further in order to state clearly what activities are essentially geological and should not be done by persons of nongeological backgrounds. Also, a schedule of minimum fees is desirable below which it would be regarded as unprofessional to operate. Possibly some sort of interprofessional regulation is needed to deal with persons practicing incompetently or in a manner that is dam-
aging to the reputation of consultants as a group.

In addition, more efforts need to be made to foster greater activities in domestic exploration and to utilize the services of consultants in these activities.

INSTITUTE INFORMATION

FEDERAL TAX EXEMPTION STATUS

The Institute was incorporated early in 1964 under the Nonprofit Corporation Statutes of Colorado, and later clearance from the United States Treasury Department, Internal Revenue Service was requested as a Federal tax exempt society. On September 29, 1965 the District Director of IRS in Denver issued a determination letter ruling the Institute exempt from Federal income tax as an organization described in Section 501 (c) (3) of the Internal Revenue Code, and classed the purpose of the Institute as scientific. The determination letter required the filing of an annual information return (form 990-A) and explained other procedures concerning payment of social security taxes; and contained the statement that donors may deduct contributions as provided in Section 170 of the Code, and other tax deductions as applied to bequests, legacies, and transfers or gifts allowed by Sections 2055, 2106, and 2522 of the Code.

In November 1966 the Chief of the Rulings Section of Exempt Organizations Branch in Washington requested information from the Institute about its charter, constitution and bylaws, and the tax status of each of our State Sections, as a part of his consideration of the issuance of a group ruling to cover all the State Sections in the Institute 501 (c) (3) exempt status. A byproduct of this request for information was the require-
ment that each State Section include in its Bylaws an Article on Dissolution. Each Section was requested by letter dated November 17, 1966 to make this change which would show that on dissolution and after the liquidation of accounts, the balance of assets would be distributed to organizations exempt from Federal income tax under Section 501 (c) (3), or to a government agency.

On April 27, 1967, the Chief of the Rulings Section in Washington advised the Institute that

"on the basis of information presented, it appears the ruling of September 25, 1965, holding you exempt under Section 501 (c) (3) of the Internal Revenue Code was is-
 sued in error."

After repeating the statements of Purposes as made by the In-
stitute, the Chief of Rulings stated that

"you are designed primarily to serve the interests of your Members and the profession of geology and as such are not within the contemplation of Section 501 (c) (3). . . . It appears that you are a professional society of the type qualifying under Section 501 (c) (6)."

and that contributions made to such an organization are

"not deductible by donors under Section 170 of the Code."

As President of the Institute, I wrote on May 25 to Mr.
Barber, the Chief of the Rulings Section, requesting an exten-
sion of his time limitations for refiled, and enclosed consid-
erable material to show the type of our activities. This letter was followed by letters in July and September and a telephone
conversation with Mr. Dodd, Chief of Exempt Group 3 in Washington on August 2, 1967. Mr. Dodd stated that deductions are permitted to donors to 501 (c) (6) units as specified by Section 162 of the Code.

During July, 1967, I conferred with tax attorneys in Iowa City. One attorney suggested that the Institute request a hearing by IRS at which time we plead for the restoration of our exemption under 501 (c) (3) with emphasis on our educational rather than scientific activities. This attorney expressed his opinion, based on his experience, that a Federal Court of Appeals would recognize that a major part of our endeavors are directed to the education of the public and of legislative bodies to a need for high standards of knowledge within the profession and to the enforcement of strong ethical practices in the interests of public welfare.

Another attorney agreed with the ruling of the Chief of the IRS Exempt Section and stated that, in his opinion, the Institute

"as presently constituted would have little hope of obtaining a Federal ruling granting a return to inclusion under 501 (c) (3) classification of the Internal Revenue Code."

This attorney believed it might be possible to rehabilitate the Institute under the 501 (c) (3) class by redefining its scientific and educational programs to fit the definitions carried in the section of the IRS Code.

The exemption classification of the Institute and its State Sections in the 501 (c) (6) group permits Members to deduct dues and assessments from their tax returns and certain other costs and contributions as Trade and Business Expenses, as stated in Section 162 of the Code. Section 162 is more restrictive than Section 170, but considerable latitude is given to Members, nonmembers and corporations, if it can be shown the contribution is properly related to the income and business of the donor. The test of the validity of a deduction by a donor is that a charitable gift (under Section 170 to a group 3 unit) is primarily for the good of the recipient, and the donor does not need to be benefited; whereas, in the case of a deduction under Section 162 to a group 6 unit as a business expense, the donor receives some value in his business or affairs by the way the gift is used by the recipient. The burden of proof is on the recipient in the group 3 type of exemption but on the donor in the group 6 type.

It is apparent that the effectiveness of the several projects of the Institute is an important factor in the proof to a donor of the value of the Institute as a professional asset. The Standing Committees dealing with Employment Standards, Statutory Regulations and Legislation, Public Relations and Publicity, Relations with Governmental Agencies, Ethics, Fee Standards and Civil Service Ratings, Professional and Academic Standards, and others, can perform in ways that will become an aid to the professional work of a donor and beneficial to his income producing capacity. For example, the Professional Employment Standards Committee has already been instrumental in elevating the salaries of certain civil service classifications. Some Members have been helped by membership in the Institute in obtaining clients or a position of prestige in employment. Donors can specify the type of professional work that is being done to support their claim for deduction.

All of the differences between the group 3 and group 6 types of exemption were discussed by the 1967 Executive Committee, and it was agreed that the Institute did not have the funds to conduct legal proceedings to attempt to restore the group 3 status. Furthermore, the results would be uncertain. Finally, we decided that the 501 (c) (6) classification permits greater freedom of activity in protecting our professional standing against unfavorable and restrictive statutory regulations, or our support of useful legislation. We believe the tax deductions permitted by Section 162 will cover the types of contributions from individuals and corporations that we can expect, and only if some magnate of Las Vegas wants to give us a million dollars will we have reason to be sorry.

The Chief of the Rulings Section, Exempt Organizations Branch of the Internal Revenue Service in Washington has now issued his complete determination letter dated January 30, 1968, which confirms the interpretation issued April 27, 1967, as stated above. The Institute and its State Sections are now exempt under the provisions of Section 501 (c) (6) of the IRS Code, and previous determinations, including that of the Texas Section as of September 21, 1966 are now modified to conform to the new determination.

Members should conform to the IRS Code in making deductions of dues and additional contributions and include these as a business expense under Section 162, rather than as a charitable gift as permitted in Section 170. As business affairs differ with individuals, you may need the advice of your tax attorney as to whether you list the deduction as a part of Schedule C of Part II or on form 2106 under Part III of your tax return.

Allen C. Tester
Iowa City
March 6, 1968

P.S. One point not described above is related to a percentage limitation to contributions listed as deductions under Section 162 of the Code. Such deductions listed as a Business Expense presume an element of return in value to the donor. However, there is no time limitation on this expected return. It is presumed that a reasonable time would be counted depending on the amount of the contribution. A deduction of $1,000, for example, might be expected to be returned in value to the donor in one to five years. If in one year, then a donor would be justified in making another deduction the next year, etc., etc.

"The world is round. Only one third of the human beings are asleep at one time. The other two thirds are awake and up to some mischief somewhere."

... Dean Rusk
ENVIRONMENTAL GEOLOGY

I believe that a very important activity of the Institute should be the education of geologists in the ways to function where geological processes are related to the lives and property of human beings. It is my opinion that geologists have been so dilatory in this field that we have only ourselves to blame for the usurpation by the civil engineers of our proper professional service. Geologists have been so involved in thinking of the past or in the search for mineral resources that they go to the finding of a landslide scar, because it might give a new and clean exposure of old rock to benefit their objective, but they think little of the knowledge it yields of the lithology, the structure, and the geologic processes which might be responsible for the terrain and its restraints in land utilization. This is only one citation, but there are many more examples of the need to expand the understanding by geologists of the fact that as a part of their professional work they must be ready to serve the public whenever and wherever the principles of geology are involved.

Allen C. Tester, CPG
Iowa City, 1967

ENGINEERING GEOLOGY - A Planning Tool

Urban planners are called upon to recommend zoning laws that will affect the orderly growth of a community. Early in the development of an area, essential construction materials need to be set aside; recreational areas must be provided for; and lands must be designated for heavy industrial, light manufacturing, housing, and metropolitan uses. Too frequently, zoning for these uses has been based primarily on geography, because adequate information on engineering geology was not available.

Information concerning the engineering properties of the soil and bedrock units, environmental hazards such as landslides, floods, high ground-water table, poor foundation soils, and the location and extent of engineering construction materials is needed for laying the plans for safe and effective development of urban land.

Sand, gravel, and other construction materials occur in limited areas. If inadequate knowledge is known of the deposits, including area extent, quality, and quantity, the major portion of the deposit may be overrun by housing or other incompatible developments. In some cases, areas have been zoned for the production of gravels and other materials which were deficient in either quantity or quality or both.

Land requirements for various industries differ depending upon whether large quantities of water are to be used, whether disposal of large amounts of waste is a requirement, and whether the installation can sustain minor settlement or no settlement at all. These and other numerous factors make the nature of the geology and soils equally important as geographical location.

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Engineering Geology Studies Under Way in Oregon

Within the next few decades the major part of the Willamette Valley is destined to become a megalopolis made up of merging metropolitan areas from Portland to Eugene. In order to develop this area to the best advantage, a detailed knowledge of the ground conditions is a prime consideration. Planners will need the kind of information geologists and engineers can provide. In order to make this information available, the State of Oregon Department of Geology and Mineral Industries is engaged in detailed mapping and study of the geology and engineering characteristics of soils and bedrock of the urban areas in the Willamette Valley.

The first of such studies, "The Engineering Geology of the Tualatin Valley Region," by H. G. Schlicker and R. J. Deacon, has recently been completed. This area was chosen first because it is one of the fastest growing communities in the Northwest. The second study planned to be under way as soon as funds are available is the Salem-Dallas area immediately to the south. Hopefully, it will be completed early in 1969. The Albany-Corvallis area will follow, with completion scheduled in 1970, and finally the Eugene-Cottage Grove area in 1972.

"The Engineering Geology of the Tualatin Valley Region" provides information on the basic geology, ground water, engineering characteristics of the soils and bedrock, and geologic hazards including landslides, poor foundation soils, flooding by streams, high ground-water table, ground-water contamination, and saline wells. The report also lists deposits of construction materials, laboratory tests on these materials, and their extent and uses. The seismicity of the area is discussed and faults have been mapped. The reaction of earthquake shocks to each of the geologic and soil formations is described.

The publication is a bulletin of 103 pages containing charts and text with numerous photographs illustrating the geology. The geologic map which accompanies the report covers an area of 630 square miles at a scale of 1:48,000,000 or about 1 1/2 inches to the mile. A total of 14 separate geologic formations and soils units have been delineated on the map. In addition, eight geologic cross-sections have been constructed to show the vertical extent and structure of the formations.

Geologic hazards and bedrock contour maps have been produced at the same scale as the geologic map. The hazards map shows areas of flooding, areas having a ground-water table to within ten feet of the surface at some time during the year, the location of saline wells, areas of peat and compressible clays, and landslides. The bedrock contour map shows the top of the Columbia River Basalt, the principal aquifer in the Tualatin Valley. The contours at 100-foot intervals relate to the depth of the basalt from the surface of the ground, and therefore the map can be used to estimate the depth to inadequate ground-water supply.

This study is designed to be used by all persons and agencies concerned with expansion and development of the area. It will be useful to city and regional planners in setting aside lands containing gravel and other construction materials and laying out parks and recreational sites, zoning for heavy
industrial plants, housing, and sewage disposal. It will also provide a basis for zoning against building in places made hazardous by landslides and unstable slopes, areas of flooding, and the use or restriction of using septic tanks for housing developments. Planners and developers will find the report helpful in:

1. Evaluation of soil and foundation characteristics for industrial, commercial, and residential properties.
2. Evaluation of soil conditions for location of roads, pipelines, and other surface and subsurface installations.
3. Evaluation of response of soils to erosion, compaction of embankments, slope stability, and internal drainage.
4. Location of hazards such as areas of flooding, slope failure, and near-surface ground-water table.
5. Determination of response of soil and rock units to earthquake forces.
6. Location of construction materials including sand, gravel, and rock and stone quarries.
7. Evaluation of ground-water potential for water supply systems.
8. Location of areas where potentially valuable mineral deposits occur.

"The Engineering Geology of the Tualatin Valley Region" is available at five dollars per copy from the State of Oregon, Department of Geology and Mineral Industries, 1069 State Office Building, 1400 S.W. 5th Avenue, Portland, Oregon - 97201.

Herbert G. Schlicker, CPG
Portland, 1967

*Engineering Geologist, State of Oregon Department of Geology and Mineral Industries

HAZARDS AND/OR REGULATION

Although it is certainly not agreed among all geologists that there is a necessity for geologists’ registration under a State Board, it is agreed by a vast majority of geologists that, if such registration is inevitable, it must be governed by the profession of geology rather than some other profession, no matter how closely related.

In recent years and even recent months there has been an explosion of interest in the subject of "geologic hazards." There is hardly a geologic society or organization in the country that has not actively or passively espoused this cause. There are as many definitions of a geologic hazard as there are people concerned with geologic hazards. One of the best is as follows:

"A geologic hazard is a potential or actual change in the geologic environment that adversely affects men. Geologic events and processes responsible for such a change may be sudden and catastrophic or they may be slow and undramatic; they include, but are not restricted to, earthquakes, seismic sea waves, volcanism, landsliding, land and sea level changes and flooding."

Recently, Tom Murphy in his column, "In the Aggregate," in Mining Engineering has said that a geological hazard is actually a "people problem." It is, for the most part, a natu-

rally occurring geologic phenomenon which does not become a hazard until people are involved. In many cases the catastrophes which we regard as geologic hazards are no different than the geological processes that have been going on for millions of years. It is only when they interfere with the activities of man that they become a hazard.

This brings us to the point that the phases of geology to which some form of governmental legislation or control might apply should include all phases of geology which have any influence on the well-being of the people. A term which is coming into increasing use to describe this type of geology is "environmental geology." This includes a great deal more than the "engineering geology, senso strictu" with which we are all familiar and which has been the subject of most of the efforts at legislative action.

Environmental geology is any and all geology which has a relationship to the human environment. This includes, but is by no means limited to:

A. Related to or Influenced by Human Activities:

1. Geology of construction sites ("Engineering Geology, s.a."):
   - Homes
   - Industrial Buildings
   - Highways
   - Bridges
   - Damns
   - Reservoirs
   - Transmission Lines
   - Nuclear Reactors
   - Pipe Lines

2. Geology of Waste Disposal:
   - Liquid Waste
   - Solid Waste
   - Oil
   - Refuse Dumps
   - Water
   - Mine Dumps
   - Chemical

3. Pollution (see also 2, above):
   - Gas
   - Liquids
   - Solids

4. Geology of Environmental Alterations due to Extractive Activities: Subsidence due to: Water removal, Oil and/or gas removal, Mining; Landsliding.

5. Geology of Environmental Alterations due to Additive Activities: Subsidence due to: Water application, Loading; Landsliding.

B. Not Related to or Influenced by Human Activities:

1. Fault Movement (not including earthquakes):
   - Fast
   - Slow

2. Earthquakes

3. Floods

4. Snow and Ice

6. Tsunamis

The above list can go on almost indefinitely. It is merely a small portion of some of the preliminary work of the Committee on Geologic Hazards of the AIPG which has been established as a liaison organization to correlate the activities of scientific societies, public bodies and other organizations who are concerning themselves with environmental geology and geologic hazards.

All of the above has been given to illustrate that the effects of environmental geology on the public have already extended infinitely farther than the concepts established by the few conflicting local ordinances and regulations which have been put into effect, mostly in California, for the control of "Engineering Geologists, s.a." None of the existing local ordinances would have any bearing on the relationship of the
public to the majority of "environmental geologists."

Present governmental regulation is almost entirely confined to the relationship of the public with a very small segment of environmental geology and an even smaller segment of the total geologic profession. Without entering into an argument as to whether or not there is a need for registration of geologists we must face the fact that the field of environmental geology, which so vitally concerns the public, has gone much beyond the field of engineering geology as we have known it. It is as much concerned with public health as it is with engineering, and to paraphrase a remark made by Wes Buer, Bakersfield, California, CP, in some sectors it would be just as logical to register the environmental geologists under the Board of Medical Examiners as it would under the Engineering Board, if the profession could not have its own board.

If all professional licensing were to be placed under one licensing body, as it is in Mexico, or if even distantly related professions were under one organization, as in Alberta, there should be no objection to including geologists. However, as long as the Engineers' Registration Boards are made up principally of engineers and are concerned solely with the registration of engineers, and since the majority of the facets of environmental geology can in no way be related to engineering, or controlled, or even understood by a board of engineers, the placing of geologists under this Board would forever stifle the orderly development of environmental geology which is so vital to the public welfare.

Henry H. Noel, CP
Los Angeles, California, 1967

LETTER TO THE PRESIDENT
Mr. John T. Galey, President
American Institute of Professional Geologists
March 11, 1968

Dear Mr. Galey:

Thank you for your recent letter concerning the role of the geologist in environmental planning. I was delighted by your response to our report, and by your spirited presentation of the geological factors that should be included.

Copies of your letter are now being distributed in the University, and also in the A.I.A. headquarters.

Here at Princeton, we are making considerable progress. A new course will be introduced next year, by the Department of Geological and Geophysical Sciences, and we look forward to increasing interaction between our disciplines. The new course is:

The Physical Environment as a Natural Resource. An introduction to man's physical environment with emphasis on its use as a natural resource by man. Discussion of atmosphere, weather, climate, soil, water, vegetation and mineral resources. Their use and misuse by man is considered.

Thank you once again for your interest. Next time you are in Princeton, please drop by to visit.

Sincerely,

Robert L. Geddes, Dean
School of Architecture, Princeton University

BUT ARE YOU REALLY A PROFESSIONAL? (continued)

word, "a vocation requiring knowledge of some department of learning or science," applies as well to sea captains, aviators, plumbers, bricklayers and athletes—any who ply their specialized knowledge for gain—and causes engineers no loss of sleep. In this latter sense, all engineers are professionals, and well aware of it.

The problem for engineers and scientists centers around salaried employment and the loss of a personal client, as we can readily see when we realize that the existence of that client and the development of a professional-client (doctor-patient) relationship were what traditionally permitted occupations to organize as autonomous bodies. Codes of ethics, standards of practice and rigorous self-discipline created the conditions that earned public trust, transforming customers into clients, occupations into professions.

In the client relationship, the client confesses to technical incompetence and delegates to the professional the right to make decisions for him. The professional, in turn, accepts the role as expert and as guardian of the client's best interest, which is coupled with the implicit understanding that he will hold the client's interest above his own. It is for this reason that the practice of a profession is portrayed as a "sacred trust" and why altruism and public service are central to professionalism.

It is also a relationship in which the professional holds the greater decision-making power.

Many occupations have some professional characteristics, and some lay claim to professional status, but few succeed in gaining public recognition as professions. Business does not qualify as professional no matter how complex the training required because customers are not clients and codes of ethics are not everyday practice in business transactions, nor is business reputed to hold the public interest paramount.

Labor and trade unions represent organized occupations, but they cannot claim professional status because they do not possess esoteric knowledge, do not have exclusive competence in judging the performance of their members, nor do they have codes of ethical practice. Neither can they claim special authority or autonomous self-regulation.

Real estate brokers, undertakers, automobile mechanics and similar occupations often claim professional status, but do not receive public recognition as such, partly because of the quality of their occupational knowledge, but primarily because their "ethics" are paper ethics.

In a rapidly professionalizing occupational world, it is paradoxical that some people still think a "code of ethics" will magically win public recognition of an occupation's prestigious pretensions. Almost all occupations that vie for professional status draw up such codes, but their translation into practice needs a professional community, since it is through its community of colleagues that a profession controls the occupational behavior of its members.

The professional community grows out of the organization of the whole profession through its professional association, and from the long training required to master professional skills common to all the community members. Membership
in this community is lifelong since the professional career tends to color an individual's entire adult life and life-style. Special language, symbols, codes of behavior (professional and personal) and even dress often mark membership in highly select and closed professional communities. This influence even carries over to the wives, from whom the often enthusiastically played role of "doctor's wife" or "parson's wife" itself becomes a career.

And finally, the professional community, like all human communities, enforces the conformity of its members to the community standards--job-related and otherwise.

Thus the group to which the highly-committed professional looks for approval, from which he receives disapproval, and with which he shares most directly his career activities is the work-colleague group. And the colleague group, having a stake in the professionalism of all its members, does not merely observe passively but actively expresses approval or disapproval of professional performance and behavior. The group frequently has powerful tools with which to enforce its views. In medicine, for example, the colleague group states who shall use the hospitals, and senior colleague groups (old doctors, the power structure, the Establishment) run the referral system.

Clearly then, colleague groups, and through them the profession's virtually absolute power to reward or punish its members through control of advancement and recognition, are central to assuring professionalism and maintaining sway over the profession. A college course or two in "professionalism" will not produce the loyalty to one's colleagues and the personal investment in a professional career that is required to make a "profession" out of an occupation.

For the salaried professional, the nearest, most powerful and important "client" is the bureaucracy that hired him. The bureaucracy, to be sure, is not the same as the individual client, nor does it offer the personal relationships of the traditional professions. But like the individual client, the bureaucracy does need expert services in areas where bureaucratic managers are technically incompetent. And like the client, the manager delegates responsibility for technical competence to the professional.

Since the clients have become the enormously powerful employing bureaucracies, the question of professionalism for salaried professionals hinges upon the role they will be able to play vis-a-vis their employers. Will the industrial or government bureaucracy accept a client role, or will the professional be treated as no more than a skilled technical expert whose duty is to do precisely what he is told to do?

If the client-bureaucracy and the professional employee share professional goals, as in basic-research laboratories, professional schools, or certain professional firms, then no harm is necessarily done. But if the bureaucracy represents nonprofessional goals, professional status may be lost because the traditional client-professional relationship is reversed and the client holds the balance of power. The net result is the transformation of an independent professional into a dependent employee.

The independent professional and the loyal employee are opposites in the work world. Insofar as the obligation of a salaried "professional" is no more than to be a loyal employee, then to that degree he cannot be a professional in any meaningful sense of the word. As a technical expert, he becomes a part of the bureaucracy and is indistinguishable from it.

If we would see how the transformation from professional to employee occurs, we must examine the balance of power between the profession and the hiring bureaucracy.

The control structure of professions differs sharply from that of a typical bureaucracy. Within a profession, the source of discipline and reward is primarily the informal and essentially egalitarian structure of the colleague group. But within bureaucracies, discipline lies in an authoritarian hierarchy of power where directives from above control performance, discipline and rewards. And it is both in the nature of bureaucracy and in its interest to delimit as narrowly as possible the bounds of professional authority--especially the authority of the colleague group--to limit professional autonomy.

The conflict between the requirements of professionalism and those of the bureaucratic employer touch upon almost every sphere of professional life. For the profession, commitment means the dedication of individual professionals to the goals, standards and approved occupational behaviors that represent professionalism. But bureaucracy demands obedience from its employees. Commitment refers also to the professional's allegiance to a professional colleague-group and concern for the group's recognition of himself. But bureaucracy must control its employees' careers and it therefore rewards, not committed professionals, but loyal employees.

In the professions, recruitment means that personnel are hired and promoted on the basis of their professional commitment and professional competence. But bureaucratic management seeks employees who will place the interests of the organization above those of their profession, or whose skills are more managerial than technical.

In their organization, professions foster colleague-groups to ensure the existence of a community of professionals, but management wants project units comprised of mixed specialists. Such units inhibit development of effective colleague-groups and make it easier for management to control the specialists. Without a powerful professional association and without the support of a colleague-group, a man stands alone.

Professions require freedom of communication, especially since an individual's reputation rests upon his professional accomplishments. But industrial firms and government agencies treat their commercial and state secrets as their exclusive private property. And this secrecy undermines professionalism because it prevents the profession from rewarding career achievements properly, leaving the field to the employer. When professions can no longer control career rewards, they have lost the chief incentive to professional commitment. This fact, among others, accounts for the drain of professionals into management.

Thus a young man soon sees that salary and promotion come from his employers, not his profession. If he is ambitious, he soon aspires to management, for that way, not through his profession, lies advancement. And he also learns
that if he bucks the system, he will not be promoted and may even be fired.

The matter of a profession’s responsibility to the public is most complex and has no simple answers. But in the professions, the power acquired through expertise bears implicit responsibility for the end-uses of that power. And it is certainly clear that when a profession touches upon human health and safety, placing profit above the public welfare does not best serve the public interest.

In industrial bureaucracies, however, the accounting and advertising departments often have more to say in final technical decisions than do engineers. Costs and marketing considerations can override good engineering criteria, and the engineer is helpless to protest. Responsible as they are to the public welfare as stated in their codes of ethics, engineers strive for safe and functional designs. But manufacturers are responsible to their stockholders and stockholders want profits, so management wants designs that will also be profitable. When things go wrong, though, it is the engineer as professional who is held to be at fault, and it is his professional status in the eyes of the public that is threatened. (See Editor’s Note)

Successful professions traditionally have been those organized occupations that have formed their own power base. This means that newly professionalizing occupations or those threatened with depersonalization have two options:
- Organize into effective independent power centers that can confront the bureaucracies and successfully hold their own within them, or,
- Retrench into areas where the professional is already protected from bureaucratic clients, i.e., work only for bureaucracies that share professional goals.

However, the second option would very likely mean excluding from the profession large numbers of workers who are now employee-experts. And the question would also arise: to what profession do these safely-sponsored individuals really belong? Is an engineer who is also a university professor a member of the engineering profession or the teaching profession? If he is safely a member of the teaching profession to which the public readily grants professional status, then why should he worry about his professional status as an engineer?

Engineers have typically mistaken the techniques of collective bargaining and unionism as incompatible with professional status while equating service-to-management with professionalism. Such a view misinterprets the essential nature of professionalism—indeed professional authority in professional areas of competence.

Physicians, for example, engage in what is essentially collective bargaining through their extensive political lobbying. University professors protect their autonomy through the threat of withdrawing accreditation from institutions that limit academic freedom. These are but two of many examples of the disguised collective bargaining indulged in by the traditional professions. They are, however, fortunate in that they now possess such power that their threats alone are usually effective.

These professional organizations, however, as we have said before, are not trade unions in the usual sense, nor should they be mistaken as such. And just as traditional trade unions cannot serve properly the professional needs of doctors, lawyers and professors, neither can they properly serve the needs of engineers or other salaried professionals. Unionization does not provide a satisfactory answer to the engineer’s concerns with status, power and professional responsibility, unless questions of professional authority and responsibility are incorporated as important demands in negotiations. When professional demands are more important than wages and benefits, organization for collective bargaining—“unionization”—will in fact become militant professionalism. The “union” will then function as a professional association with enough power to demand effective professional recognition, i.e., it will operate in effect like the American Medical Assn. or the Assn. of American University Professors, and some other professional and quasi-professional organizations in the nation.

In essence, then, the problem confronting salaried professionals is to demand successfully that the employer accept the rule of client and respect the autonomy and authority of the employed professional, just as he does that of the free professional.

The historical development of all the free professions makes it clear that only collective action can end the misuse and exploitation of a salaried professional. The current attempts by nurses, social workers and teachers to employ collective bargaining as a means to force recognition of professional authority and independence, along with better working conditions, better pay and improved benefits, illustrates the importance of professional initiative and reform. This militancy has grown out of the practical experience of these new and old professions. Nurses cannot provide adequate nursing care, teachers cannot properly teach, and social workers cannot provide decent services without basic changes in their relationships with the service bureaucracies that hire them but do not always share their professional goals.

These groups have taken up the weapons of traditional trade unionism not only to redress the balance of power between themselves and their employers, but also to give weight to their professional judgment on the standards, performance and quality of the services that they themselves provide, a judgment that frequently conflicts with the bureaucracies that employ them.

When professional associations do not take the initiative for increased professionalism and reform, then individuals turn to the trade unions as the only organizations that can put teeth into their demands.

Ultimately, the prestige and freedom that go with true professional status rest upon public recognition, which has its source in the public’s belief that professional skills and services are essential to the general welfare.

Perhaps no other profession today so profoundly touches upon public life and influences the public welfare as does that of engineering. And as so many become more dependent on technology, engineering and engineers become more and more central to the public welfare. At the same time, engineering, as a profession that claims responsibility for serving the public good, becomes more and more visible to the public. The
result is that engineering as a true profession, rather than as a trade, becomes essential to the present and future welfare of society.

Equally, the fate of engineering as an occupation depends on whether or not engineers as a group will seize the initiative in enhancing their own professionalism.

Editor's Note: Miss Dixon's thoughtful article illustrates the dichotomy which afflicts not only the engineering profession but that of geology as well. On the one hand, both engineers and geologists are highly skilled artisans and no less professional in their behavior than doctors and lawyers. On the other hand, as long as engineers and geologists divide their allegiance between their professions and the imperatives imposed by their employers, they will find it difficult to achieve the Olympian sanctity of the established professions.

Of interest to the reader, and with particular reference to one of Miss Dixon's statements, is a recent Associated Press news release:

Engineers Held Over Disaster

"Belluno, Italy -- (AP)

"Nine leading Italian engineers were ordered yesterday to stand trial on charges they were responsible for the 1963 Vaiont Dam disaster that caused 1993 deaths.

"An investigating magistrate acting as a one-man grand jury agreed with the public prosecutor that the disaster could have been avoided."

PROFESSIONAL PARAGRAPHS

SHERWOOD D. TUTTLE, CPG, and Chairman, Department of Geology, University of Iowa, has been granted a leave of absence for the academic year 1968-69. Dr. Tuttle will teach Geomorphology and Glacial Geology at the Chinese University of Hong Kong from September 1968 to June 1969 as a Senior Lecturer under the Fulbright-Hays Act.

HOWARD E. ROTHROCK, CPG, represented The Geological Society of America as delegate to the inauguration of Dr. Lloyd Drexell Vincent as President of Angelo State College, San Angelo, Texas, on March 25, 1968.

DR. PHILIP A. CHENOWETH, CPG, formerly research associate in geology at Sinclair's Tulsa Research Center, and previously associate professor of geology, University of Oklahoma, has resigned to open an office as consulting geologist in the Shell Building, Tulsa.

Montana Geological Society held a luncheon meeting at the Commercial Club Building in Billings on March 20. DR. JOHN R. FANSHAWE, CPG, Montana Power, spoke on "Geology of Dry Creek Storage."

Intermountain Association of Geologists in Salt Lake City heard a talk on "A New Ordovician Standard Section for Western Utah" at its luncheon meeting on March 18. Speaker was DR. LEHI HINTZE, CPG, Brigham Young University.

JOHN HAUN, CPG, Colorado School of Mines and Barlow & Haun, Inc., has been elected 1968 president of the Rocky Mountain Association of Geologists. He succeeds EARL GRIFFITH, CPG, Argonaut Oil & Gas Co. Other officers include CLIFF NOLTE, CPG, consultant 1st Vice President, and ROBERT CHANCELLOR, CPG, Stuarco Oil Co., Inc., 2nd Vice President.

EDWIN B. ECKEL, CPG, formerly with the U.S. Geological Survey in Denver, is now the editor for the Geological Society of America in Boulder.

DR. JAMES M. HANSELL, CPG, geologist and geological counsellor for Sun Oil, has retired after 38 years with the firm.

Rocky Mountain Association of Geologists, at its Denver luncheon meeting on March 1, heard a talk on "To Pump or Not To Pump; Fluid Pressure and Earthquakes - Worldwide" by DAVID M. EVANS, CPG, Colorado School of Mines.

WALLACE DEWITT, JR., CPG, was presented with one of the awards for best slides illustrating his paper "Correlation of the Lower Mississippiian Rocks in Western Maryland and Adjacent States" presented at the SE Section meeting of GSA in Durham, N.C., April 4-6.

ROBERT O. VERNON, CPG, has been elected Chairman of the SE Section of GSA.

ARNOLD DAN BUZZALINI, CPG, Research and Special Projects Geologist with the Skelly Oil Company, has been helping the profession in his spare time by teaching in the Graduate School of Tulsa University on "The Geology of Industrial Minerals."