

IEEEIEEE GROUP ON
MICROWAVE THEORY

AND TECHNIQUES

ANTENNAS AND PROPAGATION GROUP

**NEW NEWSLETTER**

EDITOR:
RALPH E. HIATT
1519 Brooklyn Avenue
Ann Arbor, Michigan 48104

ASSOCIATE EDITOR:
KENNETH K. MEI
University of California
Berkeley, California 94720

EDITOR: G. P. Rodrigue

School of Electrical Engineering, Georgia Tech, Atlanta, Georgia 30332

Number 68, August 1972

A WORD ABOUT THIS ISSUE

by G. P. Rodrigue

This unusual special joint issue of the GMTT-GAP Newsletter is focused on the issues of the upcoming IEEE National Elections. It has come about at the suggestion of Al Clavin, GMTT President, with the financial backing of TAB. The gestation period for this number was less than one month - a summer month at that - and this is offered as an explanation for the lack of thoroughness that some may detect.

The real basis of the issue is the work of the Division IV Professional Action Committee headed by Bob Rivers. Bob's article on pages 10 through 13 outlines the development of this group from an adhoc GMTT Committee to a Division Committee. The primary purpose of this Newsletter is to provide our members with information on the candidates for the IEEE Board of Directors and their views, and this is accomplished by publication of the results of the Questionnaire on Professionalism sent out by River's group (see pages 6 through 9). Hopefully this will help to make the IEEE election more open and democratic; these elections have heretofore always seemed rather aristocratic to the man-in-the-street. (Power to the people?)

At issue in this election is also the amendment to the IEEE Constitution (see page 13). The views of a number of individuals on this subject are contained in various articles. These appear heavily weighted on the "activist" side. Some explanation is in order. The "activists" were the first ones contacted, and several knew that the issue was coming (being largely responsible for its emergence). An attempt was belatedly made to seek balance by soliciting from four responsible "conservative" members a statement of position. Two responded with amazing and much appreciated speed (see Hansen page 6 and Weinschel page 4). John Whinnery was traveling and unavailable until too late to make the deadline. If I may paraphrase our telephone conversation, however, he stated that while he had in previous times pushed for certain modifications of IEEE policy, he feels that the membership should not overreact to the current situation. He also feels that an issue of the importance of the IEEE elections should be treated with a thoughtfulness not commensurate with a two day delivery time (which was all he had between trips).

These details are presented here to indicate that there are, in fact, the proverbial two sides to this story as well, and reputable individuals are available to defend both positions. The AP-MTT Groups have been at the forefront of the fight to modify IEEE's posture, now is the time to act.

Finally, my thanks go to Prof. K. K. Mei who bravely assisted from the AP side in the absence of Ralph Hiatt who was out of the country.



John Guarrera, IEEE Director Region Six (right) presents Pension Position Statement to Congressman James Corman, Acting Committee Chairman, at the House Ways and Means Committee Hearing, May 10, 1972.

IEEE PUSHES FOR PENSION LEGISLATION

On May 10, 1972, the IEEE joined with NSPE, ASME and ASM in presenting testimony to the U.S. House of Representatives, Ways and Means Committee in reference to Administration Bill HR-12272 concerning private pension plans. John Guarrera, IEEE Region Six Director represented IEEE in presenting testimony on the participating societies position. The Institute of Electrical and Electronics Engineers, the National Society of Professional Engineers, the American Society of Mechanical Engineers, and the American Society for Metal, representing a combined membership of over 300,000 engineers, have agreed on a single joint position.

Prominent on the Ways and Means Committee, and acting Chairman during this Hearing, was Congressman James Corman, 22nd District (San Fernando Valley, Calif.), who has been a long time friend and supporter of the IEEE, having participated in many Wescon, Wincon, Council, and Section programs.

Congressman Corman was one of the first public officials to recognize the plight of engineers and to meet with the IEEE at a major Los Angeles Council Meeting in September of 1970, to discuss the then newly existing problems of: Unemployment, Pensions and Professional status. He has been continuously active in seeking solutions to these problems.

(continued on page 2)

In brief, the Societies' position statement sought to expand and extend the provisions of Bill HR-12272. The basic elements of the legislation as provided in the Bill, and the Societies' position is as follows:

1. Eligibility

The Bill has varying time in service, and age conditions for eligibility. This delays Vesting and reduces benefits. The Societies' ask for immediate eligibility (in no event more than one year), and no age condition.

2. Vesting (Portability)

HR-12272 would Vest 50% of accrued benefits when the sum of the years in the plan, and the pension age equals 50 (the so-called rule of 50). This would produce discrimination against older workers, spread cost unevenly, and be of no help whatsoever to the vast majority of engineers under the mobility and technology obsolescence existing today.

The Societies' recommend immediate Vesting, which would provide the needed portability. Mindful of the economic problems, the Societies' proposed as an alternative, a 20% Vesting per year, with the full Vesting at the end of five years, with no age conditions.

3. Funding, Insurance, Disclosure, Administration

These four vital elements of a pension plan (except for some mention of funding) are not covered in the Bill. It is the Societies' position that there must be provisions and standards to ensure that the money will be available, that funds are properly administered, and that there is full and open disclosure of fund management and status.

4. Individual Plans

Under the existing "Keogh" Law, the self-employed are permitted to contribute tax deductible dollars to a private plan. HR-12272 would increase this amount to the lesser of \$7,500 or 15% of income per year. It would also permit employers who are not in an employer plan to deduct 20% of the first \$7,500 of income when contributed to a private plan. Those in an employer plan could enter a supplemental private plan, but their 20% tax deduction above, would be reduced by the employee contribution whether Vested or not.

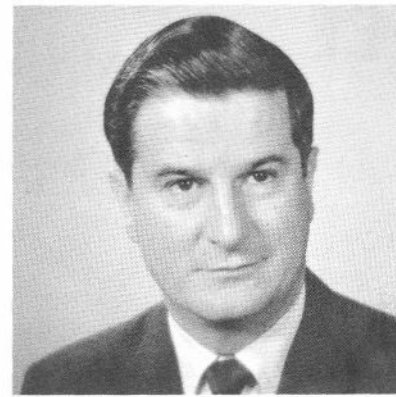
The Societies' strongly urged that employees should be allowed the same higher limit as the self-employed; further, that the reduction for an employer contribution be effective only on those contributions that are unconditionally Vested to the employee.

Under the wide range of industry pension plans (from none to outstanding), the employees must have the same opportunities to provide for their future security as is granted to the self-employed.

The Societies' Testimony and Statement was well received, and assured of serious consideration.

The joining together of the four Societies' in a single statement of position on this major area of concern to engineers, is a milestone in society activities that hold high promise for the future.

The IEEE, via the United States Activities Committee (USAC), and Director John Guarrera, (who is Chairman of the Professional Activities Committee), as well as other Regional Directors comprising USAC, will continue to pursue solutions to the pension problem, as well as other areas of concern to IEEE members.



AN EDITORIAL

**by John B. Damonte
President**

IEEE Group on Antennas and Propagation

The Institute of Electrical and Electronic Engineers is in the process of restructuring itself in order to serve the pressing needs of its 145,000 U.S. members. Just a few years ago, we were content to restrict ourselves to scientific, literary and educational activities. Today, IEEE is proposing a Constitutional change and planning professional activities that would have been unthinkable in the early 1960's. What has caused this drastic change in thinking?

The late 1960's and the early 1970's saw a serious recession in the Aerospace Industry. This event clearly demonstrated that government, society and corporate management view the engineer as a commodity — a useful "thing" to be hired or laid-off as required by the dictates of business and the Defense Budget. Many competent engineers lost their jobs, their life's savings and their retirement benefits because of contract cancellations, through no fault of their own. Even though many were able to find new jobs, it meant starting over again — often in a distant city. Others, less fortunate, are still without jobs today.

During the past five years, we have seen many minority groups organize themselves into powerful pressure groups to insure that the government in Washington, D. C. is attune to their needs and desires. Their success has not escaped the attention of IEEE members. Thus, it is not surprising that IEEE is preparing to do what many other organizations have been doing successfully for some time — make our presence felt. IEEE must raise such a loud voice and learn to apply so much political pressure that we cannot be ignored! Such an endeavor will require our financial support and our personal effort if it is to be successful. IEEE can provide the framework and the direction for these efforts. There is nothing unprofessional or immoral about these activities. We are simply learning to play a "game" that has been going on since before the time of Caesar. We have been slow in learning and we have a lot of "catching up" to do!

Once the Constitutional and organizational problems have been settled, I recommend that IEEE implement plans for the following effects:

1. Work with government and employers to develop a portable pension plan that provides full vesting in one year.
2. Work with employers to develop a good, workable system for equitably handling the grievances of salaried professional workers.
3. Develop a salary adjustment system which annually permits an engineer to meet with his employer and negotiate salary based on the merits of his work, rather than the current blanket percentage increase approach.
4. Work with employers and the University/College system to insure an adequate but not excessive supply of engineers for future years.
5. Work with employers to develop fair and reasonable plans for "lay-offs". These procedures should be available in writing to all engineers.

(continued on page 3)

6. Work with government to provide funds for retraining and/or relocating surplus engineers so that this vital national resource will not be wasted.

7. Work with employers to provide a professional work environment for engineers. Let's get rid of the "bull pens"!

8. Work with employers to provide engineers with the opportunity to attend national meetings and symposia.

These are but a few of the many projects that IEEE can undertake.

I believe that IEEE is at a cross road. The U.S. membership of IEEE has clearly indicated that it wants IEEE to take an active role in pursuing professional goals. By adopting and implementing such a policy, IEEE can lead the way to a new era where the electrical and electronics engineer can occupy a secure and respected position in life and where society and government can reap the abundant harvest of engineering research and development. On the contrary, if IEEE fails to accept this challenge, I predict that engineers will turn to labor unions for representation. Most of us do not relish this prospect but it may be our only viable alternative.

I sincerely believe that IEEE will make the effort to become the professional society that we all desire. IEEE will require our whole-hearted support. I pledge myself to do whatever I can to promote the professional goals of IEEE and I pray that you will do the same.



IEEE at the Crossroads

by Al Clavin
President

IEEE Group on Microwave Theory and Technique

IEEE at the Crossroads

by Al Clavin

The IEEE today stands at the crossroads. It can either continue as it has been, namely as a technical and educational society, or can take a turn leading into the area of engineering professionalism. The Board of Directors of the IEEE has framed a Constitutional change which allows for this new course of professional action. An explanation of these Constitutional changes is offered in the June issue of Spectrum in an article authored by Don Fink, which everyone should read.

This subject of professionalism within the IEEE has been a controversial one. There are many who feel that the IEEE should remain a technical society, saying that we have little knowledge of politics or economics and therefore should not become active in these fields. There are others who believe that these same technical and educational activities provide a strong base which is necessary to become truly professional, that this is the only type of organization that can realistically address problems of national scientific goals, educational policy, and curriculum.

Others feel that this would turn the IEEE into a union, active in collective bargaining, trying to obtain as much financial benefit from the employer as collective bargaining means can obtain. This is not the case, as collective bargaining is not a part of the IEEE plan.

However, for those of you who are management oriented, it is well to point out that the present situation is unstable and that if the IEEE fails in its attempts to change the Constitution and to represent engineers in professional matters, that the unions will step in and this is now occurring in many plants throughout the country. Management, then, should support the Constitutional changes suggested by the IEEE Board of Directors. I believe that the rigid structure of a union would not be good for the engineering professional and am strongly in favor of a professional society. I feel that the IEEE can represent the engineer in public relations activities, in Congressional committees, as well as maintaining the technical and educational excellence that it has provided in the past.

This issue of the Newsletter is dedicated to giving members of GMTT and GAP opinions and facts concerning professionalism and the upcoming election within the IEEE. This election is probably one of the most important in which you will be asked to participate. It will have much significance regarding your future in the engineering profession and the future course of action in the IEEE. Look carefully at the opinions expressed by the candidates for directorships and the proposed Constitutional change. Vote your conscience, either for or against, but vote.

POSSIBLE GOALS FOR THE IEEE

by Bruno Weinschel

The IEEE dues increase coupled with the not well defined rush into "professional activities" may result in a serious decrease of IEEE membership.

On the one hand, we note unemployed aerospace engineers and an under-utilization of part of the academic community by a reduction in government aerospace and research funds. On the other hand, we observe an expanding gross national product, growth in many engineering-rich industries such as broadband communication, application of automation, mass transportation, pollution control, CATV, etc. However, there seems to be a double mismatch in attitude and knowledge: (1) many of our unemployed engineers do not know or maybe do not even care about economic matching of their efforts and solutions to the needs and pocketbook of the user, and (2) many have become narrow specialists.

A great number of engineers have not kept up with new technologies and have failed to read pertinent journals or attend important technical meetings. Most engineers have little knowledge of other disciplines. In a time of CHANGE AND OF SHIFTING PRIORITIES, NEEDS AND ASPIRATIONS, interest in and knowledge of economic and social interface requirements is essential for survival.

IEEE's professional activities ought to address itself to the basic problems, not to the symptoms. The problems include:

1. Over-specialization of the older engineer
2. Unwillingness of the established engineer to relocate.
3. His unwillingness to change attitudes, values and priorities.
4. His lack of interest to study the needs of society and match his education to these needs.
5. An inability to become deeply involved in "economic matching" of the customer's needs to his work, solutions and manufacturing or service costs.

It is unhealthy for the IEEE to pressure the taxpayer to institute programs of little merit just to employ engineers. It will damage the IEEE if it tries to teach an engineer how to increase his income at the expense of his employer. Compared with foreign engineering salaries, U.S. salaries are two to four times that of salaries paid in Israel, Germany or England.

The main support of the IEEE is the employer and mostly the industrial employer. Many companies pay the dues of engineers who belong to the IEEE and groups or societies. Engineers attend at company expense (both salary and travel) meetings and conferences.

We must expand the IEEE into a multi-disciplinary approach. The IEEE must have an early input into legislative programs which have an impact on the future of engineering. However, the IEEE must serve principally the interests of the employer in order to serve the interests of the engineer. Most engineers, in contrast to e.g. M.D.'s are not self-employed. Unless they satisfy their employer's needs the engineer's future is dim. Professional activities of the union type will not help the employer. On the other hand, an expansion of the international standards activities will help good employers to open up or recapture some markets. How many engineers know how to "Europeanize" or "Germanize" a product so that the local technician can service the product easily? How many engineers have made it their task to understand the idiosyncrasies of the local demands of some of our major export markets?

To sum it up, one may expect a negative impact on support of membership dues and meetings and exhibition attendance by employers if the IEEE strays into labor relations instead of means to improve the utility of the unemployed engineer.

Our trade balance on electronic products keeps shifting in favor of imports. The expanding European market communities, lower offshore production costs, excellence and devotion to achievements of non-American engineers, force many employers into more offshore production and engineering via multi-national organizations of foreign associates. Industrialization is for many developing nations the bootstrap whereby they attempt to raise their living standard and provide a positive trade balance. In contrast, in the U.S.A. industrialization is in the mind of the user often coupled with pollution, war, exploitation of the consumer by designs which carry a built-in self-destruction, either by style-obsolence or planned wearing out.

These are some of the forces responsible for the underemployment of our engineers. A "professional activity", as envisioned by many unemployed members, may address itself to the symptoms instead of the causes.

The IEEE can really assume the role of leadership if it addresses itself to the underlying causes instead of worrying narrowly about wage scales, employment conditions, etc. However, by addressing itself to the wrong problems it may lose its major base of strength, which are the employers of our members.

PROFESSIONALISM AND THE IEEE

by R. Mitra

Traditionally, engineers have always declared themselves as professionals - by definition that is - and everyone has cheerfully accepted the state of affairs. Now and then some radical, rabblouser is heard raising the question: In what sense are we engineers professional? The dictionary offers us a plethora of meanings that can be attached to the word, one of the simplest ones being, 'anyone engaged in a profession or occupation'. This very convenient definition allows a rug cleaner, shoe salesman, hair stylist, fashion model, and just about anybody to call himself a professional. However, it appears that people engaged in certain select occupations think of themselves as more equal than the others, or, if you like, more professional than others. This group is comprised of lawyers, doctors and dentists, architects and the so-called professional engineers, all of whom are engaged in selling their services to the general public or corporations, either as individuals or small groups, and are essentially self-employed. These 'professionals' maintain certain standards which must be met by an individual who wishes to be admitted to their profession as a practitioner. A code of ethics is also established by the organizations representing these professionals, and the members are expected to adhere to the guidelines this code.

The organizations referred to above offer a variety of programs and services aimed at enhancing the economic and professional status of their members. Refresher courses, scientific meetings, retirement plans, PR activities, publication of professional magazines, liaison work with universities, lobbying activities, etc. are included in these programs. The educational activities form only a fraction of the effort of these organizations, though they are by no means ignored.

On the other side of the spectrum are the skilled workers who work for an employer on a salary basis rather than on a contractual basis. Regardless of what they call themselves this group of people are not truly regarded as professionals. Seldom do they have any elite organizations doing fancy stuff for them. A majority of these workers belong to some type of union which takes care of the job of collective bargaining for salaries and benefits.

Perched somewhere in between these two groups is the typical engineer. He has put in somewhere between four to ten years in an engineering school to earn a BS, MS, or PhD degree. Many have advanced training for research and development in the field of their choice and are capable of solving complex technological problems. Consequently, it is not hard to understand that they tend to think of themselves as professionals.

Once again, no matter what they think of themselves most engineers work for some organization rather than for themselves. During 1958-68, the years of unprecedented technological growth in the U.S. the engineers were a pampered group. The shock of realization that they had totally neglected to take care of their economic and political needs, and are therefore in a much poorer position in these respects than even the skilled workers whom they supervise, came with the cut-backs of the seventies. Now that the dust has settled somewhat, let us hope that engineers will not return to their complacent, 'don't rock the boat' attitude. Let us hope instead that they will lend an active support to the movement now underway for various professional engineering organizations to extend their scope to include economic and political interests of their clientele as well as purely technical interests.

As members of the IEEE, our immediate concern is, of course, the future course of this organization itself. Thanks to the tireless efforts of a number of active members of the IEEE, the directors of the organization have revised their earlier stand and are making efforts to respond to the needs of the membership by widening programs of the organization. It is important, however, that the membership supports the proposed amendment to the constitution of the IEEE that will give the organization a mandate for carrying out economic-political activities in addition to fulfilling its traditional technical role.

Here is a partial list of things that the IEEE could do for its membership:

1. Submit position papers on economic and political issues of concern to our profession.
2. Publish recommendations concerning professional employment policies covering patent rights, pension plans, including job vesting termination etc.
3. Engage in public relations activities.
4. Offer the expertise of the membership for consultation with federal and state agencies on matters of vital interest to the profession.

The fact cannot be overemphasized that the proposed constitution must pass in order for the IEEE to become effectively involved in these activities.

Before closing I would like to point out that during my travel in Europe last year I had many fruitful discussions with members of engineering societies in Scandanavia, Germany and Switzerland. The engineering organizations in these countries have long been what we want IEEE to become - caterer of economic as well as technical interests of their members. Why then, let us ask, should we remain behind these progressive countries and continue to live with our antiquated organization? You can best respond to the question by taking an active role in the movement to reshape the goals of the IEEE and lending your support to the Professional Action Committee.

IEEE AND THE ORDINARY MEMBER

by R. C. Hansen, Consulting Engineer
Encino, California 91316

I would like to speak for the typical Group member, and perhaps for many non-Group members as well. This viewpoint is important because the PAC and the other activists are not representative, and they often seem to extrapolate their situation to the membership at large. I am referring to the generally higher pay, higher skill levels, and greater availability of jobs that these activists enjoy.

One vital concern is pensions, and based on the engineers I talk with, many members do not yet understand that only employers can offer tax deferred pension plans. What IEEE can do is: (a) through meetings get engineers to understand the legal situation on pensions, and (b) work with NSPE and other groups to produce Congressional legislation safeguarding pension benefits, limiting full vesting periods to 5 years, etc. The existing legislation and Senator Javits bill to make improvements are so far from a satisfactory pension bill that we should expect a long, hard (and costly) struggle, lasting a number of years, to produce a really good law.

Another item for IEEE action is the raising of standards in engineering schools — not more courses but fewer and better students. Concurrently industry should learn to use fewer engineers more effectively. Engineers abroad, I believe, produce significantly more engineering output per man than U.S. engineers. In the U.S.A. the problem lies both with the schools and with industry. IEEE should work to help schools discourage marginal students and to help industry reduce non-productive paperwork. A long-term public relations campaign by headquarters toward a public understanding and appreciation of engineering would be a wise investment and would encourage the better students to become engineers.

In contrast with the past, the Institute should take public stands with Congress on important engineering related issues. For example, Congress should be aiding the financing and construction of many carefully designed (for ecological factors) nuclear power plants. These are clearly superior to strip mining gross parts of an ever-increasing number of states, and we should be heard on this. Another example concerns mass transit vs gasoline powered cars. Again the IEEE should give technical support and advice to Congress for the establishment and upgrading of modern, automated rapid transit. Even in Los Angeles, the inevitability of mass transit is being realized.

Perhaps my last point is the most important. I do not like unions, but with the ever-increasing scope and power of unions, and the resultant steady state inflation, we engineers are going to take a back seat financially very soon. We should plan the formation of a union of EE's, associated or affiliated with IEEE. Such a union would have the goal of establishing salaries based on curves of the type used now by Bell Labs, TRW, and some other companies. These curves relate salary to years since basic degree, with a different curve for each efficiency rating. Different families of curves might be used for advanced degrees, or to reflect higher salaries where the job security is less. Of course the ratings would vary widely, but these curves would be a start. The union's job would be to negotiate each year a raise in all curves, so that each man with the additional year of experience but with the same rating would get a reasonable raise. Such negotiations would not be plant by plant, but for an entire area of the U.S. at once. Merit raises would involve a rating change. Of course such a program would be difficult to start and to promulgate, but I believe it is essential for our future well-being vis-a-vis the other union workers. IEEE should be the organizing body to start such a union. It is time to start planning now.

In closing, it is worth emphasizing the major and significant changes that have and are occurring in the Institute, started by Jim Mulligan and the Board. We tend to overlook these changes, but they took a lot of doing and they are remaking IEEE. Proposed constitutional changes, and new flexibility in conventions and in publications, are some of the changes. Our new Institute can be the vehicle for better recognition and rewards for engineers, and it can become a potent force in shaping the life style of all Americans.

PROFESSIONALISM QUESTIONNAIRE

The following letter went out to the candidates on June 15, 1972. The purpose of the letter and appended questionnaire was to determine the stand of the candidates on questions relating to the establishment of professional activities with the IEEE. It is hoped that the responses tabulated will assist members in their voting.

TO:

Candidates for Director

Regions 2-4-6

Divisions 2-4-6

Congratulations on being nominated for Director/Delegate for the IEEE Board of Directors. As you know, if elected you would serve both as a delegate to and director on the Board. As a Delegate you would represent your constituency on the Board. As a Director you would have a larger responsibility to guide the policies of the IEEE during these trying times. The present system of selection does not take into account such factors as your stand on professionalism by the IEEE. Nor does there now exist a good mechanism for finding out the candidates' views.

We the undersigned and listed sponsors of this questionnaire are a group of Volunteers for Institute Professionalism. Our aim is to promote professionalism within the IEEE. We therefore request your cooperation by responding in a Yes-No fashion to a few simple but fundamental questions attached. We would be grateful if you would complete and return this questionnaire promptly but in any case before June 29th, 1972. In the interest of time and simplicity we do not solicit statements, but if you feel you must add a qualification or amplification, you may do so if you will keep it short.

We hope to publicize the answers to this questionnaire. If you do not reply, your answers will be shown as blanks. To make sure you are not away from your office for a long period, we will also make direct contact by phone or other suitable means. In order to avoid misunderstandings, your response should be in writing on the enclosed form.

Sincerely yours,

Volunteers for Institute Professionalism

Robert A. Rivers for the following: R. Backe, Q. Balzano, A. R. Chinchillo, E. Kearns, R. Mitra, S. Okwit, A. Rossoff, G. Ross



R. C. Hansen

REGIONAL CANDIDATES' RESPONSES
TO QUESTIONNAIRE ON
PROFESSIONALISM

| Questions: | Region → | | | | | |
|--|----------|----------------|-----------|------------|------|------------------|
| | Hamilton | 2 Middleton | Whitelock | 4 Arndt | Read | 6 Ingebretsen |
| 1. Are you in favor of the IEEE becoming more active in political and economic matters of concern to the electrical engineering profession? | NO | Yes | Yes | Yes | * | Yes |
| 2. As one possible activity, are you in favor of IEEE submitting to Congress and Executive agencies position papers on economic and political issues of concern to our profession? | No | Yes | Yes | Yes | * | Yes |
| 3. Should IEEE publish recommendations concerning professional employment policies covering patent rights, pension plans, job termination, and similar items? | Yes | Yes | Yes | Yes | Yes | Yes |
| 4. Do you favor vesting of pensions within one year of commencement of employment? | Yes | No* | Yes | * | Yes | Yes |
| 5. Do you favor vesting of pensions upon involuntary termination of employment? | Yes | No* | Yes | * | Yes | Yes |
| 6. Do you want IEEE to be actively engaged in public relations activities at the national level? | No | Yes | Yes | Yes | * | Yes |
| 7. Would you be personally willing to help represent IEEE before federal or local government agencies and legislative bodies on technical matters in which you have specialized? | Yes | Yes | Yes | Yes | Yes | Yes |
| 8. Would you be personally willing to help represent IEEE before federal or local government agencies and legislative bodies on political and economic matters if requested to do so by the IEEE Board because of special qualifications or circumstances? | Yes | Yes | Yes | Yes | Yes | Yes |

| Questions: | Region → | | | | | |
|---|----------|----------------|-----------|------------|------|------------------|
| | Hamilton | 2 Middleton | Whitelock | 4 Arndt | Read | 6 Ingebretsen |
| 9. Are you in favor of a mandatory assessment of dues in the U.S. for special services of a professional nature? | No | Yes* | Yes | Yes | * | Yes |
| 10. Would you prefer a voluntary assessment of dues in the U.S. for special services of a professional nature? | Yes | No | No | No | Yes | No |
| 11. Are you in favor of amending the IEEE Constitution to include professional (including economic) as well as scientific and educational activities. | No | Yes | Yes | Yes | * | Yes |
| 12. If such a constitutional amendment is passed by more than the required 2/3 of the voting members, will you continue to support the transnational character of the IEEE in the scientific and educational field? | Yes | Yes* | Yes | Yes | Yes | Yes |
| 13. Do you support the constitutional amendment recommended by the Board of Directors? | Yes | Yes | Yes | Yes | Yes | Yes |

*See Comments

COMMENTS:

Howard B. Hamilton

"Your questionnaire (enclosed) tends to force a yes or no answer to questions which can force one into a contradiction. Thus, I would like to briefly explain my position.

I feel the EE's position vis a vis professionalism including politics and economic issues is not a unique problem among engineers as a whole. Therefore, I feel an across-the-board organization, such as the local, state, and national PE groups should assume the role of spokesman on the issues which your group appears to be very interested in and for that reason I have indicated "no" to questions re my favoring this type of activity by IEEE.

However, if the constitution is amended by the membership, I of course (if elected) will do my very best in supporting and executing the mandate of the members.

Certainly, I am very sympathetic to the deep concern you and many other members feel on these issues. If elected I will do the best I can for the membership and the society. I solicit your support."

W. W. Middleton

I am happy to respond to your questionnaire, as some of your activities in this area have been known to me for some time through George Abraham, Hal Goldberg, and others.

Sometimes oversimplified Yes-No questions tend to mislead; however, I have chosed to qualify a few briefly.

You may not know that I have been and will continue to be actively involved in NSPE/IEEE discussions, since I have my feet in both organizations. This is not to say that I have foregone conclusions from either side, but an interest in finding the most beneficial environment for an engineer to exercise, exploit, and benefit from both his technical as well as his professional make-up. I find working from the inside is more productive than the outside and need not be prejudiced.

I shall look forward to working with your group if given the opportunity. Thank you for the opportunity of expressing my views.

- *4. I favor 5 year initial
- *5. Not required if 4. is employed
- *9. I'm in favor of dues reflecting total needs and not involving special assessments for special reasons. However, under current circumstances I support the action proposed.
- *12. Also the professional field where appropriate

Leland D. Whitelock

The answers represent my basic position, but specific cases may involve considerations which would change my position on the relevant question or questions.

Rolland B. Arndt

- *4. I feel a 3 to 5 year period might be more appropriate.
- *5. Yes if because of business cutbacks or similar reasons, but not for poor professional performance or misconduct.

My answers to questions 1, 2, 3, 6, 9, and 11 are somewhat qualified by my attached statement which is being submitted for publication in the Spectrum.

STATEMENT:

A sizeable portion of our membership has indicated an interest in areas other than the technical and educational areas which have been the primary objectives of the IEEE since inception. I believe the IEEE should keep the present constitutional objectives as its primary goals and should strive to strengthen itself as a successful technical society. It should offer expanded and improved technical services to its members rather than de-emphasizing efforts in these areas.

I believe that the IEEE can also contribute to the improved well-being and professional status of its members in certain areas and can use its knowledge to benefit society in general. Some steps have been taken in this direction. You will soon have an opportunity to vote on a constitutional change which will allow the IEEE to proceed further in this direction. I believe such an expanded scope is desirable, but only in those areas where the IEEE has the knowledge, background, and capability to perform such functions more effectively than other organizations can.

Improving the overall professional status of the engineer will require an organization or a group of organizations that represent a far larger portion of the profession than is currently represented by the IEEE. This can be achieved through cooperation, a federation of societies, a merger, or a new organization. I believe the IEEE should expand on the steps that have already been taken in this direction, determine the best path to follow, and initiate or join others in action to represent the engineering profession.

A. A. Read

The answers you are requesting are binary and probably imply different things to different people. In some cases my answers are conditional and would depend upon details of the proposed program.

- *1. Yes but only if this meets the greater needs of society in general.
- *2. Yes consistent with the needs of society.
- *6. Yes if this helps inform the public of the true nature of technology, but no if it is to sell "soap" only.
- *9. Depends upon the services
- *11. I am in favor of the proposed amendment but not the 1971 proposal.

E. E. Ingebretsen

As you can see from the enclosed questionnaire, I do not basically object to your approach, however, I do not feel that these questions can be answered with a simple "Yes" or "No". For example, Questions No. 4 and 5 do imply that the vesting of pensions is a simple problem with a simple answer. The economic impact of changing the vesting requirements of most industrial plans would probably bankrupt the corporation as I am sure you know most of them are funded on an actuary basis. I believe early vesting is a goal we should strive for, but not imply to the membership that the solution to the total problem is just around the corner. On Question No. 8, it should be clearly understood that there would not be any participation by IEEE in partisan politics. I do not believe that you intended that there would be, but I could read into the questionnaire such participation under unique circumstances. On Question No. 11, I do not believe any action taken by the IEEE in the professional areas should detract in any way from our primary role as a technical society.

I am looking forward to participation in the IEEE National Activity. I am sure we will have an opportunity to discuss these matters further over the next several years.

DIVISIONAL CANDIDATES' RESPONSES TO QUESTIONNAIRE ON PROFESSIONALISM

| Division → | 2 | | | 4 | | 6 | | |
|---|-------------------------------------|--|-----------------------|------|-------|-------|-------|----------|
| | Dunn | Forster | Hornfeck | Rowe | Young | Boast | House | Sarasohn |
| Questions: | | | | | | | | |
| 1. Are you in favor of IEEE becoming more active in political and economic matters of concern to the electrical engineering profession? | Not available until after July 24th | Unfair to respond when one candidate not available | Agreed not to respond | Yes | Yes | Yes | Yes | Yes |
| 2. As one possible activity, are you in favor of IEEE submitting to Congress and Executive Agencies position papers on economic or political issues of concern to our profession? | | | | Yes | Yes | Yes | Yes | Yes |
| 3. Should IEEE publish recommendations concerning professional employment policies covering patent rights, pension plans, job termination, and similar items? | | | | Yes | Yes | Yes | Yes | No |
| 4. Do you favor vesting of pensions within one year of commencement of employment? | | | | Yes | Yes | Yes | No* | No |
| 5. Do you favor vesting of pensions upon involuntary termination of employment? | | | | Yes | Yes | * | No | No |
| 6. Do you want IEEE to be actively engaged in public relations activities at the national level? | | | | Yes | Yes | Yes | Yes | Yes |
| 7. Would you be personally willing to help represent IEEE before federal or local government agencies and legislative bodies on technical matters in which you have specialized? | | | | Yes | Yes | Yes | * | Yes |

*See Comments

COMMENTS:

W. B. Boast

Comment on No. 5.: If "vesting" in #4 means ownership of the presently purchased value of the pension by the individual, then a yes answer on #4 requires no answer on #5 because the ownership is with the individual whether he is "involuntarily terminated" or voluntarily terminated. Hence I have not answered #5.

| Division → | 2 | | | 4 | | 6 | | |
|--|------|---------|----------|------|-------|-------|-------|----------|
| | Dunn | Forster | Hornfeck | Rowe | Young | Boast | House | Sarasohn |
| Questions: | | | | | | | | |
| 8. Would you be personally willing to help represent IEEE before federal or local government agencies and legislative bodies on political and economic matters if requested to do so by the IEEE Board because of special qualifications or circumstances? | | | | Yes | Yes | Yes | * | Yes |
| 9. Are you in favor of a mandatory assessment of dues in the U.S. for special services of a professional nature? | | | | Yes | Yes | No | * | No |
| 10. Would you prefer a voluntary assessment of dues in the U.S. for special services of a professional nature? | | | | — | No | Yes | * | Yes |
| 11. Are you in favor of amending the IEEE Constitution to include professional (including economic) as well as scientific and educational activities? | | | | Yes | Yes | Yes | * | Yes |
| 12. If such a constitutional amendment is passed by more than the required 2/3 of the voting members, will you continue to support the transnational character of the IEEE in the scientific and educational field? | | | | Yes | Yes | Yes | Yes | Yes |
| 13. Do you support the constitutional amendment recommended by the Board of Directors? | | | | Yes | Yes | Yes | Yes | Yes |

R. House

Much of this requires a lot of interpretation from our phone conversation.

- *4. too soon
- *7. Maybe I can't since I work for a charitable organ.
- *8. Same as 7
- *9. Not clear on this
- *10. Same
- *11. Would be willing to consider
- *13. Mostly

DIVISION IV AND GM/T PROFESSIONAL ACTION A SUMMARY REPORT

by Robert A. Rivers

Several years ago, I was assigned the job of increasing membership as Chairman of the GM/T Membership Committee. Prior to proceeding with a grand plan, I engaged in an in depth analysis of the problem. At the time, the GM/T membership was of the order of 7,000 but the microwave industry appeared to have a considerably larger number of engineers that should be members. There were several approaches that suggested themselves. One was to sell harder through a well organized chapter selling operation. This did not work because our fired up salesmen came back with responses "What's in it for me? Why should I join? I can get the transactions from the library, I can go to any of the meetings without being a member." Another approach was to make it easier for an engineer to join. This was tried with predictable but not spectacular success.

From a marketing point of view, we had a product that consisted of technical information that was available through the Transactions, Chapter Meetings, and our Symposium. The difficulty was that the technical information was almost equally available to member and non-member—certainly not an inducement to joining. There appeared to be two solutions to the product problem. One was to restrict the availability of the product to non-members. The other solution was to modify the product to produce more value that would interest a wider membership. My first approach was to try to restrict the availability of the product to paying members only. I sent up a trial balloon that I called Operation GROTF. The recommendation was that Copyright Laws be enforced except in those organizations having almost all eligible Engineers members of the IEEE. Additionally I recommended that Members not lend their copies of the Transactions to their associates. In addition, I recommended raising non-member registration fees at our Symposiums. The opposition to my recommendations on restricting availability of the Transactions was immediate and rabid. The responses in some cases verged on character assassination rather than responding to the question. There were responses commending my attempt to solve the membership problem. There were no supporters of that solution by trying to get rid of the Free Loaders. The result then was that we had only one marketing alternative left: **WE MUST IMPROVE THE PRODUCT TO APPEAL TO A WIDER MEMBERSHIP. CONSCIOUSNESS LEVEL I: WE HAVE ALL THE MEMBERS WE ARE GOING TO GET WITH THE PRESENT PRODUCT.**

In September of 1970, I made a commitment to the M/T Adcom and received support from them to devote my efforts to Membership Needs, at that time largely undefined. A standing committee was established and named the Professional Action Committee. We had already arrived at **CONSCIOUSNESS LEVEL II: THE UNSATISFIED NEEDS OF THE MEMBERS WERE PROFESSIONAL IN NATURE, NOT TECHNICAL!**

As Chairman of the M/T Professional Action Committee, I attempted to organize activities on a nationwide basis. I found that this was impossible because of the expense of making personal contact with groups or individuals around the country. This was a no budget operation. The result was that the committee was organized and began functioning in Boston, a geographically convenient location for me and the volunteers I recruited. Our first meeting was on March 17, 1971. Our starting point was a list of possible member needs for consideration. The list was as follows: Portable Retirement Benefits, Unemployment Compensation Related to Salary Scale, Reemployment Rights, Severance Pay, Competent Employment Agencies, Employment Standards, Educational Time, Educational Pay and Tuition, Retread Education, Sabbatical Leaves, Quality Standards for Educational Programs, Internships for Specialization, Library Services, Professional Contact, Right to Attend Professional Meetings, Political Patronage in

spending on R&D Programs, Political Influence on Allocation of Resources, Rights to Continuity of Technical Programs, Public Education of Engineering and Scientific Contributions, Public Education of Consequences of Suppressed Technology, Public Education of the Need to Adapt to Technology. This was the shopping list of problems. The question was: What if anything should be done about them. There was a breakdown of problem areas into areas of interest. These were considered by subcommittee to a certain extent. The entire committee discussed the problems under consideration and generally arrived at a consensus for support of the position.

The general method of operation of the committee was to establish and maintain contact with officers of the IEEE. President James Mulligan Jr. was advised of all committee outputs. In addition, Director Leo Young was advised of the committee outputs from the first. Reports were made to the GM/T Adcom. The GM/T Newsletter also carried the outputs of the committee. While consideration of the use of Spectrum for the outputs of the committee was given, the long lead time of about 4 months appeared to be too difficult to work with.

An early study was made by the author of the Employment problem and the Economic Environment. It was found that the prime causes of the dislocations were the reduction of Federal support of R&D and Aerospace and Ordnance Production; the general recession and reduction of support from the private sector. In addition, the educational system continued to produce output induced by the requirements of the early sixties. It appeared as though the dislocated supply of engineers and the continuing output would maintain a surplus until 1975. As a result, it did appear as though there was sufficient time to push through a change in the scope of the IEEE to include Professional Activities.

There were of course activities going on within the IEEE at the same time. President Mulligan had announced the NSPE affiliation. Joint efforts were being undertaken to alleviate the unemployment problem. The Galindo amendment was circulated and finally went on the ballot, its purpose to radically change the IEEE into primarily a national economically oriented society. While some members of the committee did individually support the Galindo Amendment, the committee as a whole did not take action. The ever present aim of the committee has been to provide for the additional membership needs without destroying the technical capability of the Institute.

An early output of the committee was a recommendation to the IEEE that they establish an IEEE Member Employment Service. The main thrust of this service was to have been the institutionalization of the friends and relatives approach to job finding which is the dominant mode of obtaining jobs. It was recommended that an individual be tested, interviewed and evaluated. An IEEE volunteer would act as a friend in making contacts for placement of the individual. This proposal was not accepted. It has been made several times without success. It has not been funded although an OK has been received to proceed without funding.

Discussions were being held between Leo Young, myself, and others on the means of organizationally implementing professional activities. The NSPE alternative had been offered, but the members were staying away in droves. Should a separate organization be set up to handle the Professional Needs? Should the IEEE modify its charter to engage in Professional Activities? Should a group be set up to handle Professional Activities? The NSPE problem seemed to be that they were too concerned with the problems of the practicing publically involved engineer to be effective in the employed engineer field. They never had been effective with the employed engineer. The separate organization idea was discarded because the new and separate organization would tend to draw radicals and would thus be a radical organization. What is needed is a mainstream organization with as much membership coverage as possible. Thus it is better to modify a mainstream organization by cajoling and convincing even though the leadership is conservative. The Group idea was discarded for several reasons; 1. It is a talking and paper writing

activity. 2. It is not normally an action activity. 3. If it were an action activity, then a small group would represent the IEEE in public without the direct control of the Board of Directors, a highly undesirable situation. The clincher was when I asked the question of my committee. Their response was: What are we doing on this committee if we didn't want the IEEE to do the job. CONSCIOUSNESS LEVEL III: IF AN ORGANIZATION IS IN A LEADERSHIP POSITION IT IS MORALLY OBLIGATED TO EXERCISE THAT LEADERSHIP POSITION OR TO DELEGATE IT. THE IEEE IS IN A LEADERSHIP POSITION IN THE PROFESSION OF ELECTRICAL AND ELECTRONIC ENGINEERING - EXERCISE IT OR DELEGATE IT. In this sense delegate it means to support the delegation otherwise it is "buck passing".

Further consideration of our list of membership needs resulted in a compilation of a priority list by voting. At the top of the list were Public Relations, Government Relations, and Pension Improvement. Other employment benefit items were further down the list. The committee was starting to consider an Employment Standard approach to the Economic problems. The committee was also considering the Ethics Problem. It was not that an operative Ethical Code was a primary objective, but that it is a necessary part of an overall Professional Activity. The list of priorities of membership needs was presented to the Officers of the IEEE at an informal meeting in November. In addition, the need for a commitment to Professional Activities by the IEEE was argued. At the same time, the results of the voting for the Galindo Amendment came in. The amendment lost because of the two-thirds rule, but it won in the sense that it indicated that fifty per-cent of the members wanted a radical change to activities in the economic area. The Galindo Amendment was a major watershed. It convinced the Officers and Board of Directors that some action should be taken.

In the interim, continuous contact with Director Leo Young, and participation by him in consideration and promotion of the problems led the committee to the conclusion that it should have a broader scope than just as a GMTT Committee. It therefore became a DIVISION IV COMMITTEE ON PROFESSIONAL ACTION. The committee membership had from the start been broader than GMTT. The problems were never considered to be only GMTT problems, but those of the IEEE and of Engineering in general. The organization within the GMTT and within Division IV was only because of a recognition of the problem and commitment to a solution by the people involved. There was just no effective mechanism for achieving change within the parent IEEE organization. The GMTT and Director Leo Young of Div. IV backing was effective in permitting consideration of the problems without unnecessary strictures or filtering of the output. It was also effective in transmitting the committee outputs and views to the IEEE BOD.

The IEEE BOD then set up a U. S. Activities Committee that was to consider and recommend some courses of action for the IEEE. This committee then had some hard deadlines to meet. Between the end of November 1971 and the first week in January 1972, the Committee made 6 proposals and recommendations to the USAC. These proposals were: To set up a Public Relations Activity, To Establish a Code of Ethics, To work on improving Pension Benefits, To set up a Member Employment Service, To establish Government Relations, and to establish and implement Employment Standards.

In addition to setting up the USAC, the IEEE also decided to poll the members on just what they did want. An informal committee then wrote the questionnaire that was mailed to the U. S. Members the first of January 1972. Considerable progress had been made, the IEEE now knew what kinds of questions to ask of the members and made the commitment to ask the members. CONSCIOUSNESS LEVEL IV: WHEN ALL RATIONAL TECHNIQUES FAIL TO PRODUCE A CONSENSUS, SUBMIT THE QUESTION TO A VOTE OF THE MEMBERS. The IEEE had mailed out the Questionnaire and began receiving replies. The initial tabulations were hopeful that the membership would support expansion into the professional areas. As the

tabulations came in, it was confirmed finally by over two thirds that the IEEE should engage in professional including economic activities.

This committee then proceeded to recommend a constitutional change that would provide for the implementation of professional activities in a manner to satisfy the needs of the membership. CONSCIOUSNESS LEVEL V: A PROFESSIONAL SOCIETY IS ONE THAT CONTROLS THE ENVIRONMENT FOR THE PRACTICE OF THE PROFESSION. In line with the above, a useful definition of professionalism was discovered. The characteristics of professionalism are: 1. A Broad understanding of a specialized body of abstract knowledge-theory; 2. Ability to perform a skilled and useful service to society; 3. A sense of group identity and professional authority; 4. Recognition and sanction by the community, and; 5. A code of ethics to judge performance and conduct. The IEEE in the past had been very effective in promoting the body of knowledge, item 1. Item 1. is the technical and educational scope of the present IEEE. Note however, that it is only a subset of the broad professional purposes that we are promoting. Accordingly the committee proposed a constitutional amendment to the Officers and Directors. It included a section (a) referring to the technical purpose and the body of knowledge of item 1. above. It also included a section (b) referring to the professional purpose. Included in the professional purpose was a special subpart (v) Engaging in activities to promote equitable compensation for professional services. It was felt that previous IEEE bias in considering compensation would legislate against any effective action being taken without a specific authorizing clause in the constitution. The amendment that was proposed by this committee to the IEEE Officers and Directors was as follows:

AMENDMENT TO IEEE CONSTITUTION

Article I, Section 2

The purpose of the Institute is to provide for its members those services that will strengthen the profession in the service of society, recognizing that those services are of two kinds, herein referred to as (a) technical and (b) professional.

(a) The technical purpose is related to the body of knowledge of electrical and electronic engineering. This purpose is to increase technical knowledge and to promote the interchange and availability of that knowledge in all areas of electrical and electronics engineering as well as in related technical areas, by means of publication, meetings, conferences, educational activities, and any other activities suitable and proper for the attainment of these objectives.

(b) The professional purpose is related to the interaction between practitioners of electrical and electronics engineering and society. This purpose is to promote the usefulness, group identification, recognition, and ethical performance of electrical and electronics engineers by:

- (i) Setting and maintaining standards of skills and service to society;
- (ii) Establishing a group identity and a sense of professional authority on matters of public concern;
- (iii) Engaging in activities to promote recognition and sanction by the public;
- (iv) Establishing and maintaining a code of ethics to control performance and conduct; and
- (v) Engaging in activities to promote equitable compensation for professional services.

Article I, Section 3

The character and scope of its technical services are transnational, and the territory in which these operations are to be conducted is the entire world. The IEEE shall have its principal offices in the state of New York from which it shall carry out its general administrative functions in accordance with the New York State Not-for Profit Corporation Law. Its publications activities are to be principally in the United States, as well as its largest membership activities.

Article I, Section 4

The character and scope of its professional services are national and geographical, and the territory in which these operations are to be conducted are the individual regions, parts of regions, or the combinations of regions requesting these services. A principal office for administering these professional services shall be designated in such regions, parts of regions, or combination of regions. The principal office for administering professional services in the U. S. shall be located in Washington, D. C., or in the immediate vicinity thereof, and its activities shall be controlled by the six U. S. regional directors acting together as a U. S. Activities Committee.

The purpose of the amendment was two-fold. One purpose was to have an amendment available in a form that could be supported by petition in case the IEEE Board of Directors failed to address themselves to the problem. The other purpose was to influence the Board in arriving at a constitutional amendment themselves. The amendment finally arrived at by the Board was not similar to our proposal, but it did include the professional goals. It did not include the item referring to equitable compensation and in fact included a strangely negative prohibition against union activities. The Board of Directors did however pass and support a Constitutional Amendment that would provide for the implementation of Professional Activities. It will go to the Membership with the Ballots for Election of Officers and Directors. This committee supports the Constitutional Amendment believing that it will provide the framework for Professional Activities. The Board proposed amendment is an eminently acceptable compromise. Legal opinion indicates that it would permit Employment Standards setting and enforcement activities to the extent of listing, accreditation and censure.

Concurrently with the discussions at the Board level regarding and implementing Constitutional Amendment, discussions were going on in regard to the organization and support of Professional Activities. CONSCIOUSNESS LEVEL VI: YOU CANNOT OPERATE A PROFESSIONAL ACTIVITY THAT REQUIRES FACE TO FACE CONTACT WITH PEOPLE WITHOUT ADEQUATE FUNDING. It occurred to me that the Officers and Directors were not taking Professionalism seriously. My argument was that the planned financing of professional activities was only Tokenism and that the \$250,000 planned for next year would not bring the level of activities up far enough to make them useful to the member and with visible enough results to make the activities appreciated. To achieve a first year credibility level of services, we must have \$500,000. In addition we should plan on a second year level of \$1,000,000.

Much of the decision power on the funding of Professional Activities would be in the hands of the Board of Directors. As a result it became more than ever necessary to have directors that are favorable to Professional Activities. We then prepared a questionnaire to be sent to the U. S. Director Candidates primarily. It was sent to Candidates for Director for Regions 2, 4, and 6, and for Divisions 2, 4, and 6. All of those queried were U. S. Members except for 1 Canadian. The results of that questionnaire are published elsewhere. I have agreed to make no Editorial Comment or interpretation. It is up to you as a member to interpret the response or lack of response in light of your interests. CONSCIOUSNESS LEVEL VII: IF YOU WANT DIFFERENT GOALS FOR YOUR SOCIETY, YOU MUST ELECT LEADERSHIP THAT HAS THOSE GOALS IN MIND.

A first attempt has been made to come up with an organizational structure to implement Professional Activities. This was discussed by the committee and with members of the MTT Adcom. The result was a revised organizational recommendation that was made to the U. S. Activities Committee and to others. This proposal recommends

that a Committee of the U. S. Regional Directors be the controlling body for U. S. Professional Activities. This committee might also have on it a minority of appointed members taken from the operating sub-committees of the U. S. Activities Committee. The committee in the majority however would be controlled by elected Directors responsive to the needs of the membership in the U. S. Three major sub-committees would be needed, one to oversee Facilities and Services that would be needed for meeting places, offices, staff support, and possibly a Professional Activities Publication. This activity would support broader direct membership contact and public contact. Another major sub-committee would be the External Relations committee. Its charge would be to maintain a rational engineering environment where it is effected by outside forces. The outside forces encountered would be the Government, the Public, and the Employers of Engineers. Still another major subcommittee would be the Professional Development Committee. Its charge would be to predict the needs for engineers in their specialties, to see that institutional and casual educational activities were producing the quality and quantity needed, and to insure that the present supply of engineers are made aware of potential changes in the practicing environment and are given every opportunity to modify their capability to meet the demands. Below is outlined the recommended organization of the U. S. Professional Activities from a committee point of view, and the services they can deliver to the member;

| U. S. PROFESSIONAL ACTIVITIES— IEEE COMMITTEE & STAFF ACTIVITY | MEMBERSHIP SERVICE RECEIVED |
|--|---|
| U. S. Regional Vice President | Someone to write to with a gripe |
| U. S. Regional Directors as Committee | You nominate & elect to control Prof. Ac. |
| Facilities & Services Committee | Provides physical plant & housekeeping |
| Hq. Fac. & Publication | Publication on Professional Activities |
| Regional Services Offices | A Place you can contact and meet yr Dirctr |
| Section Serv. Off. & Mtg Fac. | Comm. Mtg. Place, Pers. Member Serv. |
| Accounting, Data Bank, Memb. Rec. | Disbursement Expense Funds, Manpower Data |
| External Relations Committee | Controls relations with outside world |
| Government Relations Committee | Controls representations before govt. bod. |
| Legislative Counsel | Makes representations before Cong. Comm. |
| Membership Contact | Determines positions of members on issues |
| Legislative Research Staff | Deter. & Recomm. Mod. of Leg. to meet needs |
| Legislative Contacts in Field | You work directly with Cong. as Tech. Advisor |
| Public Relations Committee | Determines policy on public representations |
| Staff writers | Translates Eng'r written to Pub. readable |
| Writers Volunteer | You write for public consumption |
| Field Contacts Volunteer | You work with science writers & editors |
| Employment Standards Committee | Controls policy on employment standards |
| Employment Standards Accred. Comm. | Investigates and Accredits Employers |
| Employment Stds Roster Maint. | Maintains Roster of Accred. Empyrs for Memb. |
| Emplmt Stds Surv. & Enf. Comm. | Listens to complaints and recommends action |

| | |
|--------------------------------------|--|
| Membership Legal Couns. Retnd. | Available to you on recommend. of comm. |
| Professional Development Committee | Maintains control of input, output, & Mod. |
| Manpower Planning Committee | Controls studies and pre- dictions of Manpwr. |
| Manpower Studies Committee | Controls studies on capa- bilities & availability |
| Data Base Maint. & Surveys | Makes current surveys of availbl Manpower |
| Technological Forecasting Comm. | Makes forecasts of Engrg Demand in Spectcls. |
| Dissemination Activity | Makes Member, Educators & Industry aware trnds. |
| Ethics Committee | Recommends changes in ethical standards |
| Ethical Code Interpretation | Interprets Members ques- tions on ethical prob. |
| Ethical Code Enforcement Comm. | Hears complaints of members & others |
| Career Development Committee | Assists you in making Eng. a Lifetime Career |
| Internship Accrediting Comm. | Evaluates & Accredits Industry Internships |
| Testing & Career Counseling Comm. | Member Testing and Counseling on Request |
| Member Employment Service Comm. | Assists you in job finding by personal contct. |
| Educational Standards Comm. | Controls Accreditation Standards for EE/ET |
| Representatives to ECPD | Represents IEEE on ECPD |
| Undergraduate Ed. Stds. Comm. | Recommends Undergrad Stds of Accred.-Quality |
| Graduate Ed. Stds. Comm. | Maintains Standards in Specialties |
| Retread & Retraining Ed. Stds C. | Recommends Retread & Retraining Programs |

An operating system as recommended would be capable of alleviating many of the symptoms observed by the members over the last three years. **CONSCIOUSNESS LEVEL VIII: WE CANNOT LEAVE CONTROL OF OUR CAREER ENVIRONMENT TO THE GOVERNMENT, INDUSTRY, OR TO THE EDUCATORS.** It is certain that many of the problems of the recent past are due to government actions. Promotion and excess output in the Science area. Excessively rapid changes in funding of R&D beyond the capabilities of the supply to adjust to demand for engineers. Industry hoarding and then excessive reduction with changes in availability. Educational system desire for continued growth regardless of system demands-excused on basis that an Engineering Education is good background. The engineers themselves are partly at fault for failing to recognize the possibility of a different kind of career environment in an engineering surplus situation.

CONSCIOUSNESS LEVEL IX: THE PROFESSIONAL ACTIVITY SHOULD BE OPERATED AS THE FEEDBACK CONTROL SYSTEM FOR OUR CAREER ENVIRONMENT. WE SHOULD ESTABLISH GOALS, MEASURE WHERE WE ARE WITH RESPECT TO THE GOALS, MODIFY INFLUENCERS TO REACH OUR GOALS, SPECIFY FUTURE GOALS, MODIFY THE CURRENT PRACTITIONERS TO SATISFY FUTURE NEEDS, AND ENCOURAGE THE RIGHT AMOUNT AND QUALITY OF NEW INPUTS. In the recent past we have seen a number of open systems operating within the IEEE. Committees have been trying to operate to encourage Electrical Engineering enrollments in the face of massive surpluses. If they had done their homework and could predict a need at the time of graduation it could be excused. It can not be excused because they had not done their

homework. If they had taken care of their unemployed members' problem first it could be excused, but they did not.

CONSCIOUSNESS LEVEL X: THIS LEVEL HAS NOT BEEN REACHED YET. IT MAY BE THE COMPUTER MODEL FOR THE CONTROL OF THE CAREER ENVIRONMENT.

It may at first look appear to be slightly absurd to treat this problem on the basis of levels of consciousness. It was in fact the process that we went through in arriving at the present. We could actually feel being stuck on an intermediate level of understanding of the problem and searching for some way to the next level. In the process, we have not done a good job of educating the entire IEEE membership. We have however carried along a number of individuals. In conversations now, I find many who are still at the level of considering only the detailed symptoms, the point at which we started several years ago. I believe the IEEE leadership understands the disease, knows what the cure for the disease is, but I am not convinced yet of their commitment to control of the Career Environment through a closed loop Professional Control system. The goals of the Professional Action Committee have been reached with the setting up of operating committees within the U. S. Activities Committee. Members of the committee are serving on some of the USAC Subcommittees. The commitment of all members to participate in Professional Activities is needed. Do not wait to be asked, volunteer!

Text of the proposed Constitutional Amendments

(New content indicated in *italic type*)

ARTICLE I—

NAME, PURPOSE AND TERRITORY

Sec. 1. The name of this society is The Institute of Electrical and Electronics Engineers, hereinafter called the IEEE.

Sec. 2. Its purposes are: (a) Scientific and educational, directed toward the advancement of the theory and practice of electrical engineering, electronics, radio and the allied branches of engineering and the related arts and sciences; means to these ends include, but are not limited to, the holding of meetings for the reading and discussion of professional papers, and the publication and circulation of works of literature, science and art pertaining thereto: (b) *professional, directed toward the advancement of the standing of the members of the professions it serves; means to this end include, but are not limited to, the conduct and publication of surveys and reports on matters of professional concern to the members of such professions, collaboration with public bodies and with other societies for the benefit of the engineering professions as a whole, and the establishment of standards of qualification and ethical conduct. The IEEE shall not engage in collective bargaining on such matters as salaries, wages, benefits, and working conditions, customarily dealt with by labor unions.*

The IEEE shall strive to enhance the quality of life for all people throughout the world through the constructive application of technology in its fields of competence. It shall endeavor to promote understanding of the influence of such technology on the public welfare.

Sec. 3. The character of its scope is transnational and the territory in which its operations are to be conducted is the entire world. *In addition to its world-wide operations, the IEEE may engage in activities directed to the interests and needs of members residing in a particular country or area of the world. The procedure for undertaking such activities shall be specified in the Bylaws. The IEEE shall have its principal offices in the State of New York from which it shall carry out its general administrative functions in accordance with the New York Not-for-Profit Corporation Law. Its publication activities are to be principally in the United States, as well as its largest membership meetings.*

**DIVISION IV CANDIDATE FOR
IEEE DIRECTOR**

JOSEPH E. ROWE

STATEMENT:

I am certain that you are aware of the fact that there will be a Directorship election in Division IV in the fall. In fact, ballots and information will be sent to all Division members by September 1, 1972, with ballots due at IEEE Headquarters by November 1, 1972. I hope that you will be advertising the upcoming election in your summer and early fall Group Newsletter and encouraging all the membership to vote.

My purpose in writing is to let you know that I am a candidate for Division IV Director and that I would appreciate the support of your Group Administrative Committee and membership. I have enclosed a brief summary of my past and present technical activities, including information on IEEE committees and Group activities. You will note that since finishing a two-year term as Chairman of the Electron Devices Group I have had the privilege of serving as Editor of the PROCEEDINGS OF THE IEEE.

There are many important questions coming before the Board of Directors relating to Society goals and functions and needed membership services, and I believe that my extensive past activities in Group, Section, education and publication activities of the Institute well qualify me to represent the membership interests. If elected, I will work for the continued strengthening of all of the Groups within the Division. In particular, Group member services, both direct and indirectly through the chapters, must be continuously reviewed and strengthened.

BIOGRAPHY:**JOSEPH E. ROWE**

Chairman and Professor
Electrical and Computer Engineering Department
The University of Michigan
Ann Arbor, Michigan

Dr. Rowe has been associated with the University of Michigan since 1951, engaging in fundamental research on microwave systems, microwave devices, noise theory, electromagnetic field theory, plasmas and solid-state phenomena and devices, and has published widely in these areas. Formerly a lecturer, assistant professor, and associate professor of electrical engineering, he is now a professor of electrical and computer engineering and since 1968 has been Chairman of the Department of Electrical and Computer Engineering at the University. From 1958 to 1968 he served as Director of the University's Electron Physics Laboratory, concerned with research on microwave electron beam tubes, beam-plasma systems and solid-state phenomena and devices. He still retains an active affiliation with this research laboratory. During his administration as chairman, the department developed its offerings in a number of areas including computers and now offers two baccalaureate degrees; the department name was subsequently changed to reflect this addition. Dr. Rowe's consulting activities include numerous government, educational and industrial organizations.

IEEE Activities — (S'53-M'51-SM'61-F'65) OFFICES: Editor, Proceedings of the IEEE, 1971-72. COMMITTEES: Ad Hoc Meetings, Chairman, 1970; Electron Tubes, 1960; Electronics, 1961; ISRC Subcommittee on Cultural and Scientific Exchanges, 1971-72; Long Range Planning, 1971; New and Specialized Technologies, 1965-66; Publications Board, 1971-72; Proceedings Editorial Board, Chairman, 1971-72; Technical Activities Board, 1968-69. SECTIONS: Detroit. Communications Technology Committee, 1955-56; Southeastern Michigan, Electron Devices/Microwave Theory and Techniques/Antennas and Propagation Chapter, Vice-Chairman, 1962-63, Chairman 1963-64. GROUPS/SOCIETIES: Electron Devices, Administrative Committee, 1963-72, Chairman, 1968-70, Chapters Chairman, 1966-68, Membership and Publicity Chairman, 1970-72, Nominating Committee Chairman, 1970-71. CONFERENCES: Conference on Electron Tube Research, Chairman, 1961; Electron and Laser Beam Symposium, Co-Chairman, 1966; International Microwave Symposium, Co-Chairman, 1968; National Electronics Conference, Board of Trustees, 1971-72, Board of Directors, 1972. REPRESENTATIVE: Delegate to Popov Society, Moscow, 1970. STUDENT BRANCH COUNSELOR: University of Michigan, 1958-60. CURRENT GROUP/SOCIETY MEMBERSHIPS: Antennas and Propagation, Circuit Theory, Engineering Management, Electron Devices, Computer, Microwave Theory and Techniques, and Education.

DIVISION IV CANDIDATE FOR
IEEE DIRECTOR

LEO YOUNG

STATEMENT:

A director/delegate accepts two responsibilities.

First, as delegate he represents his constituency (Division IV includes G-AP, G-ED, G-MTT, G-SU, G-PHP, S-MAG and QEC) on the Board and on TAB OpCom.* He must keep each Group fully informed on developments within IEEE, so that technical services can continually be updated and improved. As your delegate since January 1971 I have so far attended some eighteen Group AdCom meetings, about as many Board, TAB and TAB OpCom meetings, and have worked closely with your officers. I have brought our Groups' views before Tab OpCom and the Board, and if necessary acted as advocate for a Group. My philosophy is to create the climate for technical innovation, while attending to the special needs of each Group, Society or Council in our Division.

Second, a director serves on the Board also for the benefit of all members. Many members have become deeply concerned about unemployment, underemployment, and job insecurity in our profession. I believe a healthy technical climate can exist only in a healthy professional environment. We accordingly set up a Professional Action Committee in Division IV in January 1971, which helped shape Board action (see Don Fink's article "Blueprint for Change" in the June 1972 Spectrum, p. 38). The task before us is to remain transnational in technical matters, while evolving an organization which, in cooperation with other professional societies, creates an environment wherein our members can realize their potential as engineers and scientists.

I intend to continue to work for an Institute that is strong both technically and professionally, and that is responsive to its members' wishes.

*Technical Activities Board, Operating Committee

BIOGRAPHY:

LEO YOUNG

Program Manager, Microwave Techniques
Stanford Research Institute
Menlo Park, California

Dr. Young holds degrees in physics, mathematics, and electrical engineering. Before joining Stanford Research Institute in 1960, he had been head of the antenna laboratory at Decca Radar and advisory engineer at Westinghouse Electric Corporation. He has published extensively in the area of microwave filters and couplers; he has also directed research in antennas, phased arrays, ferrimagnetic devices, solid-state circuits, microwave integrated circuits and acoustic surface waves, and has participated in technological forecasting. He has edited several books on microwave topics, including one written by Japanese authors; he has taught at Stanford University and was visiting professor at Leeds University, England, in 1966, and at the Technion (Israel Institute of Technology), Haifa, Israel, in 1970-71. He has been consultant to the Stanford Linear Accelerator Center and various industrial, educational and government organizations.

IEEE Activities — (M'54-SM'56-F'68) OFFICES: Board of Directors, 1971-72. COMMITTEES: Antennas and Waveguides Standards, 1965-66; Computer Aided Design Analysis and Realizability, 1966-67; Constitution, 1972; New Technical and Scientific Activities, 1966-67; Nominations and Appointments, 1972-73; Standards Coordinating Committee 14 (Quantities and Units), 1970-72; Technical Activities Board, 1969, 1971-72; United States Activities Committee — Professional Activities Committee, 1972. SECTIONS: Baltimore, Antennas and Propagation-Microwave Theory and Techniques Chapter, Secretary, 1959-60; San Francisco, Microwave Theory and Techniques Chapter, Chairman, 1963-64. GROUPS/SOCIETIES: Microwave Theory and Techniques, Administrative Committee, 1965-72, Chairman, 1969, Vice-Chairman, 1968, Transactions Editorial Board, 1959-72, Operations Committee, Chairman, 1970, Microwave Magnetics Standards Committee, Chairman, 1969-70, Microwave Measurements Standards Committee, Chairman, 1968-69, Technical Committees Coordinator, 1968-69, National Lecturer, 1968. CONFERENCES: IEEE International Convention, Program Committee, 1968; International Microwave Symposium, Program Committee, 1963-72, Chairman, 1966; International Solid State Circuits Conference, Program Committee, 1968. REPRESENTATIVE: Joint Societies Employment Advisory Committee of California, 1971-72. CURRENT GROUP/SOCIETY MEMBERSHIPS: Antennas and Propagation, Circuit Theory, Aerospace and Electronic Systems, Electron Devices, Microwave Theory and Techniques, Sonics and Ultrasonics, and Electromagnetic Compatibility.

COMMENTS ON IEEE PROFESSIONAL ACTIVITIES

by Dr. V. Galindo
V.P.I. and S.U.
Blacksburg, Va. 24061

I have been invited, as a member of the IEEE Professional Activities Committee (PAC) and one of the originators of last year's constitutional amendment, to comment briefly on the present proposed amendment.

In the limited time available for me to write this letter, it occurred to me that I might best make no comments since I believe it imperative that this amendment be passed, and I would want to say nothing that may lose votes for this amendment.

To those conservative members who would prefer to have the IEEE remain exclusively technical and non-professional, I would say that you do not have that choice any longer. Failure of this amendment will very likely lead to a split and disintegration of IEEE as it has been functioning.

What will be done with regards to "professional action," if the amendment passes, will in part depend upon the recommendations of the PAC to the Board. Those members who favor effective professional action should in no way construe that passage of the amendment will accomplish that goal.

There is still substantial opposition to achieving effective professional action in the sense that I perceive this goal which is to put the engineer on a par with the physicians and dentists in this country in terms of responsibility (ethics) and security, remuneration and independence (standards of qualification).

In effect, the quality and number of engineers must be indirectly controlled by a technical-professional organization. No organization admits to the use of the word "control" - although the clergy, physicians, unions, industry, etc., all in their own interest recognize the necessity for such control.

I am putting forth a proposal for a coordinated professional program aimed at achieving this goal and eliminating some of the impediments towards achievement. In terms of achieving a truly professional status for the engineer and implementing the "qualifications and ethics" clause of the constitutional amendment, I propose the following coordinated non-technical committees be formed by PAC to draft plans determining procedures and methods for achieving:

- 1. Standards of Qualifications -
2. Ethical Standards and Responsibilities -
3. IEEE Certification Procedures -
4. Federal and/or State Licensing -
5. New Accreditation Standards -
6. Lobbying activities concerned with the above objectives -
7. Contracts and Professionalism Committee -

which will look towards an eventual contractor-contractee arrangement which could largely replace the present employer-employee arrangement. Some very large and small corporations do in fact favor this approach to acquiring the services of engineering talent.

Finally, and most significant (and quite different than the AMA), I propose a

8. Nominations and Voting Procedures Committee - which would recommend procedures whereby member participation, at least in professional non-technical activities of IEEE, would be equal in terms of one engineer - one vote both for nominations and voting.

Third Class

0176180 F
T S SAAD
3 HURON DR
NATTICK

602 *
7232
MA 01760

"POSTMASTER: IF UNDELIVERABLE, DO NOT RETURN."

345 EAST 47TH STREET, NEW YORK, N.Y. 10017



Non-Profit Org.
U. S. POSTAGE
PAID
New York, N. Y.
Permit No. 8021