A Special Report by the U.S. Activities Board of IEEE

HOW USAB HELPED MEMBERS IN 1976

• You are a 50-year-old EE working on a Government aerospace contract for $17 290 per year. A new company takes over the contract and you receive an offer to continue your employment at $8700 per year.

• You are 35 years old and farsighted. Consequently, you're troubled by your company's inadequate pension plan. You would like to "opt out" and set up your own Individual Retirement Account (IRA). This way, you could sock away 1500 tax-deductible dollars every year and thereby add a tidy supplement to your ultimate retirement benefit. But the law forbids this simply because you are covered by your company's pension plan.

• You are an EE with a severe conscience. You take seriously the IEEE Code of Ethics' charge to "protect the safety, health and welfare of the public and speak out against abuses in those areas affecting the public interest." But you also have a family to support and so you keep quiet about what you consider an unsafe practice on the project on which you're working. After all, if you "blow the whistle" and lose your job in the process, who will help you?

• You are a prolific inventor. You've garnered a number of patents over the years, and while this has brought you a lot of praise, it rankles a bit that you've had to assign your company all the rights to your inventions. True, you've had some promotions, but you would still enjoy having some direct share in the income from these inventions. But there's nothing you can do. It's "company policy," and not unusual at that.

These four dilemmas are real. They have confronted IEEE members in the past and they confront them today. But one thing has changed, however; the Institute is doing something about them, and about a great many other aspects of a member's professional life as well.

The agent for change is the U.S. Activities Board (USAB), first established as a committee in 1972 when members amended the constitution to put more stress on advancing their professional status, security, and living standards. The four years since have, not surprisingly, been turbulent ones, involving the never-easy effort to go from ground zero to a focused, self-sustaining program aimed at meeting real needs at a reasonable cost. The year 1976 saw substantial progress toward achieving these goals, and this report has been prepared in recognition of your need—and right—to learn about this progress. Since space prevents mentioning everything USAB did during 1976, we have purposely limited the report to highlights of those efforts (some successful and some not) we feel have a direct bearing on specific aspects of members' professional lives.

1. WHEN YOU CHANGE JOBS

More than 80 percent of IEEE's U.S. members change jobs every 6.8 years. Since the typical corporate pension plan calls for vesting after ten years, this means most members forfeit some or all of their pension rights each time they move. Indeed, USAB estimates that less than 30 percent of you are covered by plans that would adequately meet your retirement needs. The rest may well have little more than Social Security and personal savings to fall back upon.

There appears to be a need for legislation that:

- Prevents an employee from forfeiting monies that have been paid into an existing pension plan when he or she changes jobs or retires before the minimum period for vesting, or
- Provides for earlier vesting, aimed specifically at serving highly mobile professionals.

Unfortunately, no single piece of legislation seems likely to be introduced in Congress that would accomplish this. There are just too many competing interests and too many legal complexities. What does appear worthwhile though is a series of narrower legislative actions aimed at building, step by step, on the reforms embodied in the Employee Retirement Income Security Act (ERISA) of 1974. IEEE worked diligently and effectively for passage of ERISA, which corrected many deficiencies then existing in pension programs. However, there are still many deficiencies to correct.

Consequently, during 1976, USAB representatives concentrated on lobbying in Congress to amend the existing tax laws in three respects:

- To permit employees in such high-mobility occupations as engineering to contribute the first $750 of self-employment income (from moonlighting, honoraria, etc.) to a Keogh plan (such as the Continental Bank Keogh plan the Institute presently offers its self-employed members).
- To enable a corporate employee whose company does not contribute $1500 annually to his pension account to personally invest, on a tax-deduct-

ible basis, the difference between $1500 and the actual corporate contribution in either an IRA or in his corporate pension plan. (This would enlarge the ultimate retirement benefits of a majority of IEEE members.)

• To amend Section 401(a) of the Internal Revenue Code to require as a condition of tax qualification of a corporate pension plan that each employee be given the opportunity to opt out of the plan and thereby make himself completely eligible to establish and contribute to an IRA (15 percent or $1500 per year, whichever is less).

We consider the results to be as significant for what they reveal about the larger environment in which IEEE operates these days as they are for the actual pension improvements they produced in 1976. Consider the first item. It involves restoring a "mini-Keogh" plan that was eliminated from ERISA through a legislative error. In October 1975, USAB asked the Internal Revenue Service, which was in the process of writing regulations for ERISA, to write regulations promulgating the mini-Keogh. They declined, saying it was not up to them to correct the legislative error and that we had to go back to the Congress to have it corrected. USAB did, and Congress agreed to correct it. But in doing so a new eligibility requirement was added that did not appear in ERISA. It held that in order to establish a mini-Keogh, you could not have an adjusted gross income in excess of $15 000. Since most engineers and scientists have adjusted gross incomes above $15 000, this virtually wiped out participation by the engineering and scientific community. As a result, from April until September, when the 1976 Tax Reform Bill was passed, USAB lobbied to have the $15 000 earnings ceiling either eliminated competely, or at least raised to $30 000.

The results were disappointing: The mini-Keogh was established but the $15 000 earnings limit remained. We were advised that in a year when "loopholes" were on everyone's mind, Congressional staff estimates that $25 million in revenues would be lost if this ceiling were removed probably sufficed to keep it in. However, we plan to work for a more favorable earnings limit in the next session of Congress.

We believe anticipated revenue losses also played an important role in defeating our efforts for the second reform we wanted—allowing people covered by poor or inadequate corporate pension plans to make tax-deductible contributions to their own IRA. Provision for the so-called Limited Employee Retirement Account (LERA) was in the House version of the Tax Reform Bill, and got to the Senate—only to be quickly eliminated by the Chairman of the Senate Finance Committee. This LERA is undoubtedly much more important to EEs than the mini-Keogh, and although it enjoyed considerable support in both Houses, it failed—almost exclusively, we were advised, because of the whopping one-half-billion dollar revenue loss attributed to it.

We made a last-minute appeal to the Senate and the House by telegram to try to overcome the adverse action of the conference (between the Senate Finance Committee and the House Ways and Means Committee) in defeating our issues. This effort was of no direct avail, but did produce immediate replies and expressions that include support for new legislation in the next Congress. We, of course, wish to build on this support at that time.

We did get one improvement from the Tax Reform Bill, however: an increase from $1500 to $1750 in the maximum someone with a nonworking spouse can put into an IRA. Of course, this is a long way from the $7500 a self-employed person can invest, but we have at least set a precedent for raising the limit, and we believe it can be put to advantage in future legislative efforts.

The attempt to amend the Internal Revenue Code to permit opting out was defeated as a result of opposition from organized labor. However, we took nonlegislative action in this area during 1976, which, if successful, should prove an extremely significant step toward the implementation of a related concept. That concept is "carving out," where a company would be required to establish a separate pension program aimed specifically at serving engineers and other mobile professionals by, for example, providing faster vesting in exchange for somewhat lower pension benefits. USAB representatives have been working with one interested electronics company whose employees would be allowed to opt out of the company plan in order to establish their own IRAs. Should the IRS approve this particular opt-out scheme, we believe it will set an important precedent that will stimulate some employers to adopt similar plans and others to establish actual carve-out plans. Moreover, we are confident it would provide Congress with direct evidence of the need for LERA legislation and thus help our lobbying efforts in that regard.

2.

IF YOU GET LAID OFF

Employment assistance

USAB's campaign to obtain the kinds of improved pension coverage just described will obviously benefit any member who gets laid off. While working for such legislation, however, USAB has been rendering immediate aid through its employment assistance program. During 1976, this involved:

• Mailing hundreds of information packets to members who requested these guidelines for job-hunting and resumé-writing.

• Conducting periodic employment surveys and providing supporting data to local employment assistance and other USAB projects. The U.S. non-Student members were surveyed in June and August 1976. On the basis of these two surveys, we estimated that unemployment among IEEE members rose 0.2 percent between June and August. Regions 1 and 6 had the highest unemployment in June, and Regions 1 and 5 in August. Several Sections found these data helpful in supporting their requests for funds to develop or expand employment assistance programs.

• Providing financial support and training people to run the popular job-hunter workshops and job-referral services that are operated by different Sections. We estimate that 2000–3000 members were helped by these programs during 1976, and we hope to be able to increase our support so that more Sections can offer them in 1977.

• Providing the Cleveland Section with instant information on job openings via their "What's-Up" line. This is an intriguing experiment and we

are presently investigating the feasibility of extending it to other Sections as well as to the Washington Office.

Insurance

A national consumers group has placed the IEEE's Group Life Insurance Plan at the head of its list of "best buys" among member society programs, and USAB is continually reviewing all the offerings in its group insurance program to keep them up to date and to see that they provide the best coverage possible. But the critical problem, of course, is that when people are laid off they risk losing their coverage under the life insurance, disability income, and major hospital plans.

To prevent this, USAB has been working with the IEEE Insurance Administrator to develop "insurance for insurability." Through such a plan, members can be protected from losing benefits because of job termination. Substantial progress was made in the development of this plan and we hope to offer it to members in 1977.

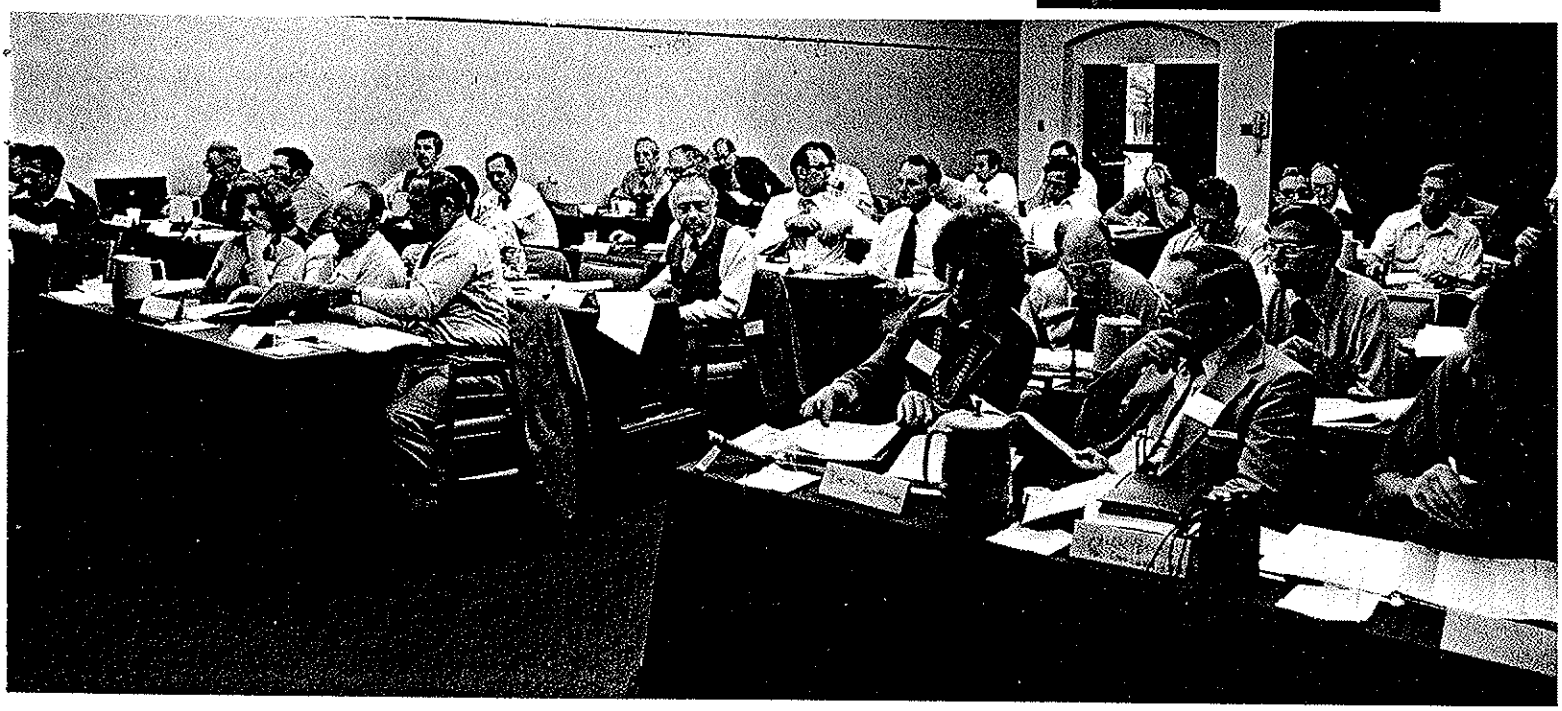
PAC coordinators and chairmen at USAB's first national workshop on professional activities are briefed by IEEE Senior Past President John Guarrera and USAB Chairman James Mulligan (seated).

3.

WHEN THAT GOVERNMENT CONTRACT ENDS

Working under service contracts

In 1970, electrical engineer *X* was a senior engineer making $15 600, *Y* was a chief engineer making $20 000, and *Z* was a senior staff engineer making $20 000. Six years later, these three EEs, who among them had 64 years of experience, were working in lower-level jobs that paid $13 000, $16 000, and $14 000 respectively. They—and more than a dozen other engineers—told USAB last summer that they had



been forced to accept salary reductions because of competitive bidding practices in the Cape Canaveral region during this period. Similar stories, including details of homes lost and careers shattered, were related by members in Huntsville, Ala., and other places where a crumbling aerospace economy had hurt engineers employed under maintenance, or service, contracts awarded by the Government to private corporations.

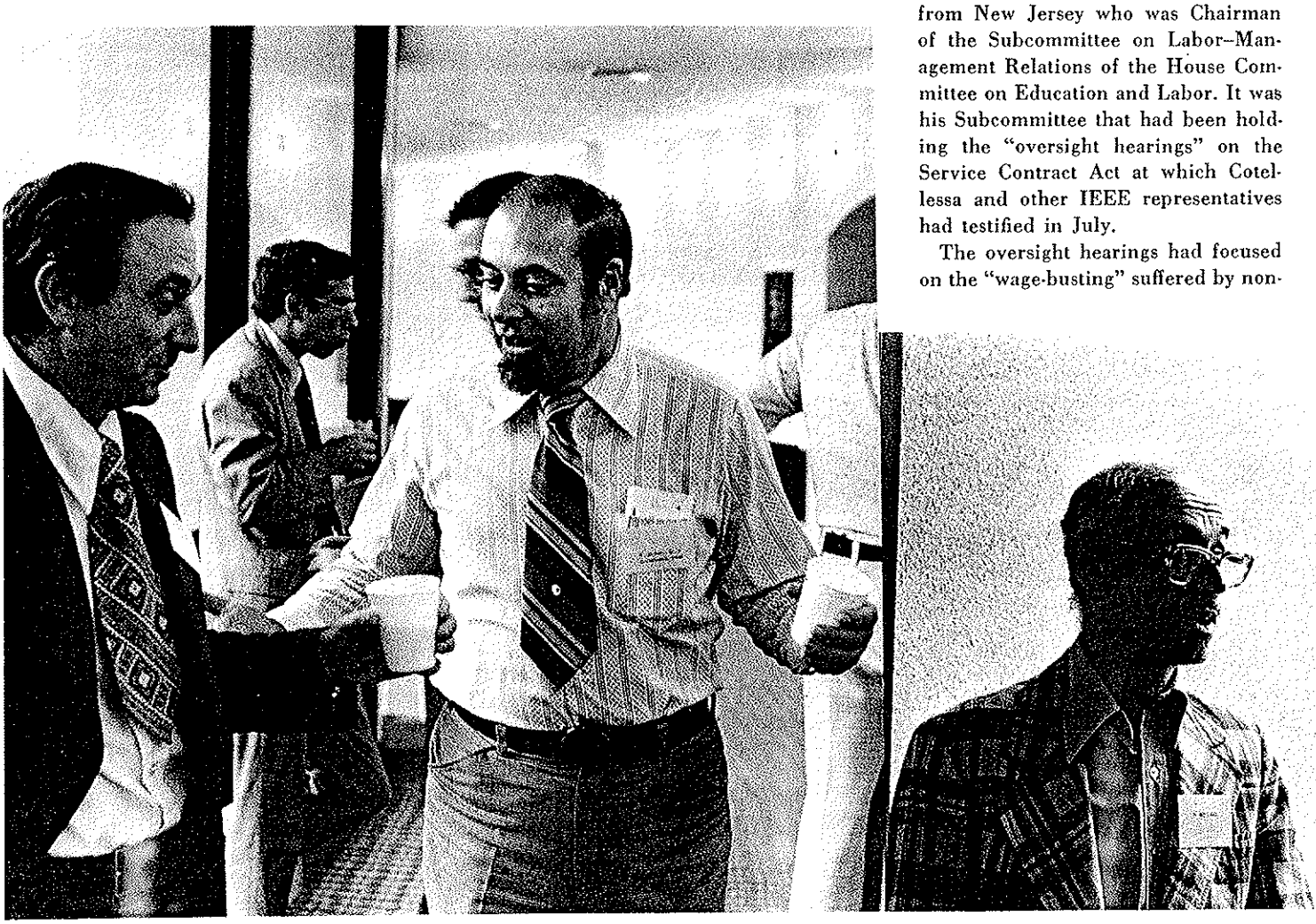
What happened, briefly, was that these employees would inevitably have their salaries raised during the term of the contract. But when the contract expired and a new one was released for bids, the only place where a corporation could make significant cuts was in salary expenditures. Moreover, since the 1965 Service Contract Act protected the "successor rights" of hourly employees, guaranteeing them a certain level of salary and fringe benefits despite the renegotiation of a service contract, the only salaries that could be cut were those of "professionals," principally scientists and engineers. As a result, when the aerospace business collapsed in the early 1970s, many engineers found themselves being offered new jobs at salaries as low as $135 a week. As Executive Vice President Robert Cotellessa told a House Subcommittee in July 1976, when he testified about this situation on behalf of the IEEE, AIAA, and ASME: "Experience has shown that the new competitive bidder has an advantage in bidding because many of the technical professionals he will utilize are not yet his employees under the prospective contract, but are the very workers who will be seeking employment when the incumbent loses the contract." Cotellessa called for modifying the Service Contract Act so that there would be statutory protection "to eliminate the current vulnerability of technical professionals to exploitation."

In the months that followed this testimony by Cotellessa (and other IEEE representatives), USAB worked assiduously to bring about this statutory protection. We were deeply concerned that the events of the early 1970s were about to repeat themselves, because another raft of five-year service contracts was due to expire at the end of 1976. Essentially, what we wanted was legislation that would extend the protection of the Service Contract Act to engineers, scientists, and other professionals. Not surprisingly, we did not achieve this during the subsequent four months Congress was in session. But what we did achieve has greatly increased our chance of success in 1977.

To understand why we feel this way, it is necessary to retrace USAB's steps through the legislative thickets. Like so many other professional organizations, we have learned that direct contact with key legislators is essential. Mailgrams to Washington and visits by concerned constituents to their local Congressmen are also essential. But alone they are not enough.

In the case of the Service Contract Act, the key legislator was Representative Frank Thompson, Jr., a Democrat from New Jersey who was Chairman of the Subcommittee on Labor–Management Relations of the House Committee on Education and Labor. It was his Subcommittee that had been holding the "oversight hearings" on the Service Contract Act at which Cotellessa and other IEEE representatives had testified in July.

The oversight hearings had focused on the "wage-busting" suffered by non-



professional white collar workers, and the Subcommittee came away from the hearings determined to remedy that difficulty through an amendment to the 1965 Act. To determine how engineers and scientists might also be protected, a meeting between USAB representatives and Rep. Thompson was arranged through the good offices of Representative James Corman (D-Calif). Thompson was interested in our problem, but he also had some concerns we had never imagined. One of them was that any proposed wording ought to define a professional broadly enough to include actors. We also consulted other engineering societies and discovered that in order to present a unified position on behalf of the engineering community we would have to avoid the appearance of trying to freeze every engineer into the same wage scale.

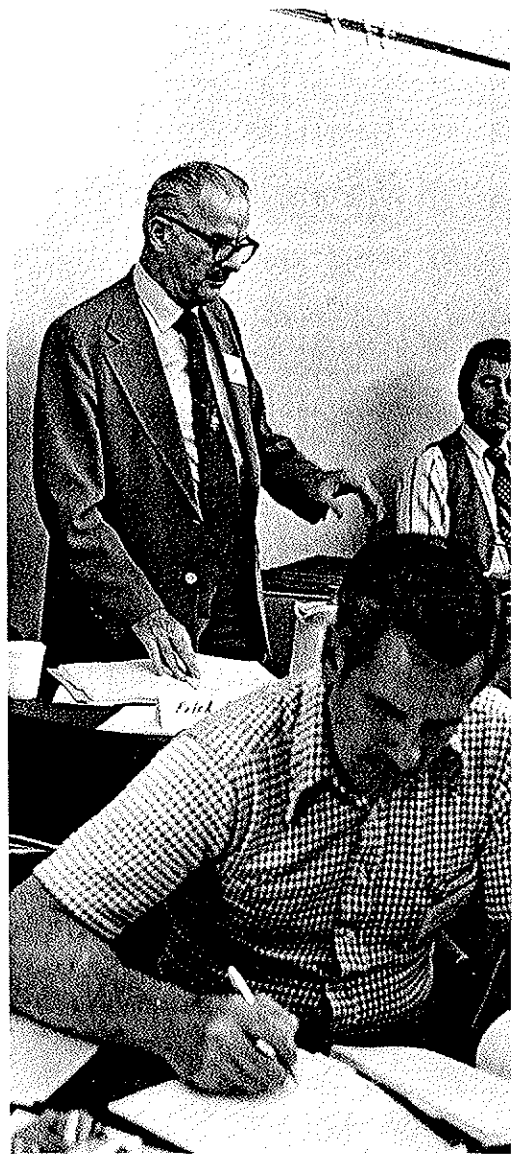
Armed with these inputs, USAB counsel and staff prepared several possible amendments and forwarded them to the Subcommittee staff. Within a day, we learned that a decision had been made to proceed with the bill extending protection to white collar workers (clerical employees mostly) but excluding technical professionals. What went wrong? John Guarrera talked with Reps. Corman and Thompson and learned that the problem was this: It was near the close of the current Congressional session and the leadership wanted no new bills of a controversial nature considered. Because Rep. Thompson's white collar bill could be introduced as a "clarification" of a law in place, it was guaranteed smooth sailing. But if our amendments were attached, hearings would be required and it would never pass in 1976. Rather than risk stalling a bill that would at least extend protection to white collar workers, we decided a better strategy would be to let it proceed and have professionals be the only employees *not* included. Consequently, after consultation with Rep. Thompson, we decided not to push to have our amendments attached to the white collar bill and to ask him to introduce a separate bill covering professionals. Even though such a bill could not pass during the current session, we figured it would receive enough support to make its chances for passage excellent in 1977.

As a result, on August 23, Rep. Thompson introduced H.R. 15228, a bill to amend the 1965 Service Contract Act to cover professional employees. Mr. Corman was the cosponsor, and the two Congressmen sent a joint "Dear Colleague" letter to all Congressmen asking them to consider joining them as sponsors of the bill, which they called "necessary to correct serious and continuing problems of 'wage busting' occurring all over the country; particularly affecting engineers and artists."

To date, H.R. 15228 has attracted 14 cosponsors of record on the bill, with commitments from at least 12 more. As this is being written, we are attempting to identify still more so as to optimize chances of the bill's passage in the next session of Congress.

As for service contracts that were up for renewal at the end of 1976, USAB Vice Chairman Hans Cherney discussed the problem with Florida's Senator Lawton Chiles, Jr. The Senator said that he and Representative Louis Frey, Jr. (R-Fla.), had an agreement from NASA to delay solicitations of proposals until the end of 1976. This effectively puts off the awarding of any new contracts until May 1977.

Along with others from USAB, as well as AIAA, Cherney also met with NASA and Air Force procurement officials to request that they be aware of the possibility of salary-busting when they consider future contracts. They expressed concern over the problem, but as they are also required to



The USAB workshop, held at Reston, Va., provided a means for exchanging information on current projects, establishing task forces to recommend priorities for 1977, and planning a series of "town meetings" where members could express their feelings about the 1977 program plan. From left to right, on this and the following page: Dov Hazony and Herb Heller, Cleveland; Robert Bruce, Long Island, N.Y., with John Guarrera; Ralph Clark (standing), Joseph Pullara, Region 3 PAC Coordinator (foreground), and Jack Andresen, Connecticut; Charles Amend, Los Angeles, Joseph Pullara, and George Kujawaski, Los Angeles; Richard C. Benoit, Jr., USAB PAC Coordinator, and Hans Cherney, USAB Vice Chairman (seated).

award contracts to the lowest qualified bidder, it seems clear that the solution to salary-busting must inevitably reside in the kind of legislation IEEE favors.

Your pension and other rights

When the 1974 Employee Retirement Income Security Act (ERISA) was being written, IEEE helped press —successfully as it turned out—for a provision directing the Secretary of Labor to study the impact of Government contract terminations on the pension and other rights of technical professionals. We were concerned that contracts would end before engineers could receive the full pension benefits for which the Government had actually paid.

As a result of this legislation, the Department of Labor, in 1975, engaged Hugh Folk of the University of Illinois to study the experiences of technical people who had suffered through the layoffs in the aerospace and defense industries in the early 1970s. Together with the other members of the intersociety Joint Committee on Pensions, IEEE, through USAB, furnished data that went into constructing his extremely detailed questionnaire. We also supplied the names of every tenth IEEE member, who then received Folk's questionnaire during 1976. As the data come in, the Department of Labor will be furnishing them to us at the same time as it proceeds with its own analysis. We expect to be consulted by the Department as it prepares its report for submission to Congress in early 1977. We believe the study will reveal a number of deficiencies in Federal procurement policies and we are fairly certain it will have an effect on procurement regulations. The reason is that the Department of Labor has the authority to promulgate changes in these regulations to go into effect within 60 days unless Congress specifically objects.

Meanwhile, General Manager H. A. Schulke, Jr., along with other IEEE officials, met with the White House Director of the Office of Federal Procurement Policy to explore ways of changing present Armed Services procurement regulations. Follow-up meetings were held with DOD procurement officials, and they have agreed to cooperate with us in trying to effect changes. Besides pension coverage, USAB feels changes are needed in separation and relocation pay practices, insurance coverage, and retraining assistance.

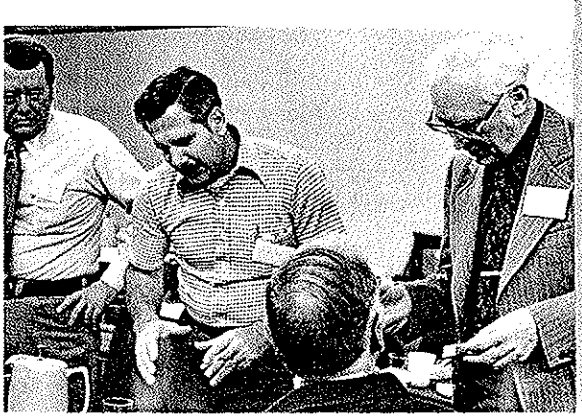
4.

AS YOU GET PAST AGE 50

Does your professional competence decline with age? Recent psychological research says "no" but many people believe it does anyway. This suspicion has undoubtedly contributed to a situation where one out of six members feel they have been discriminated against at promotion time because of their age.

Amicus action

In 1975, the IEEE Board of Directors approved a formal resolution urging all employers to adopt programs "to ensure the efficient, proper and humane utilization of experienced, middle-aged and older engineers." With this policy established, USAB initiated a direct step against age discrimination during 1976 when, in July, we had the IEEE seek permission to act as *amicus curiae* in hearings then before the New York State Division of Human Rights. These hearings involved engineers who had been laid off by the Sperry Corporation, and we learned that the question of whether or not an engineer's competence declines with age had been raised. Citing our concern for "the professional standing of electrical and electronics engineers," the IEEE filed a motion to appear, saying: "That professional standing will be materially affected by the Division's resolution of an issue underlying this matter: Does an engineer's professional competence necessarily decline as a function of the passage of time since graduation from engineering school, making that factor a permissible factor in decisions to hire or discharge engineers, or do only other factors determine the profes-



sional competence of a given engineer? Because of its experience and expertise, IEEE believes that it would be able to assist the Division in its resolution of that issue, and therefore IEEE seeks an opportunity to present its views to the Division as *amicus curiae*."

Following this, the Sperry Corporation filed an affidavit with the Commission embracing the basic proposition the IEEE sought to establish; namely, that an engineer's professional competence does not necessarily decline as a function of the passage of time since graduation from engineering school and that, accordingly, the time elapsed since such graduation is an impermissible factor in decisions to hire or discharge engineers.

In this way, a significant principle has been established—one we believe will prove important should similar cases arise because it will be citable in such hearings.

Legislative relief

During 1976, USAB was also able to identify two avenues along which to pursue further action in combating age discrimination. One is the legislative route, involving a necessarily long-term effort to amend the 1965 Civil Rights Act to include older professionals in its affirmative action requirements. The other is to apply to the White House for an Executive Order requiring affirmative action by Government agencies to ensure there is no discrimination against older professionals on Government contracts.

USAB representatives have already discussed the latter possibility with the White House and were asked to supply data demonstrating that the problem does exist. As a result, we are now seeking hard data on engineers who have been discriminated against because of their age.

TAKING CHARGE OF YOUR CAREER

Few questions you as an individual engineer face are more important than how to make sure your professional value and marketability do not decline over the years. This is not your boss's prime concern, and consequently it is critical that you assume responsibility for your own career rather than leave it to the mercy of the prevailing economic and technological winds.

Manpower report

This concern with an individual's career is reflected in the 1976 Manpower Report, in which the factors that influence career paths receive far greater attention than do simple statistics. An article by James J. Rago, Jr., outlines the steps an individual can take if he or she wishes to "take charge of their own career before it is too late." Another article, by Rok Peters, helps readers answer the provocative question: Do you really want a career? And a long-range look at the electronics industry beyond 1986, by Herbert Kleiman, and at the human resource needs of the power industry, by Larry Dwon, should give the average EE a much better idea of where these industries are headed than he or she had before.

Career assessment

During 1976, USAB launched a program aimed at providing members with a more direct form of career assistance. Some 8000 randomly selected members received a 12-page "Career Assessment" questionnaire asking them to detail their career progress within their organization and to assess the value of their job to the organization. Those who so desired had another questionnaire sent to their immediate supervisor asking for the organization's view of the person. The questionnaires were then processed by James Rago, a career development authority at Cleveland State University School of Business Administration, who has been working in this field for some time. Dr. Rago will use the data from the questionnaires to show how an engineer's professional momentum is affected by age, length of job tenure, previous professional experiences, personal behavior, and other factors. He expects to be able to generate a variety of statistical profiles illustrating, for example, the probability that someone who is becoming overly specialized will also become of less value to his organization.

Employer cooperation

Career development, particularly when it involves continuing education, naturally requires the cooperation of employers. In a search for ways of increasing this cooperation, USAB began, in 1976, arranging meetings between its members and engineering managers. The first of these meetings was held in Northbrook, Ill., and brought six educators together with six managers from major companies in the area, including Minneapolis-Honeywell, Bell and Howell, and Motorola. Paul Carroll, who chaired the meeting, reported to USAB that one of the important (and, to some, surprising) points to emerge was a preference on the part of the industry for retraining an employee in a new technology instead of hiring a new graduate. The employee, it was stressed, knows the company's procedures, processes, and business philosophy, whereas a recent graduate not only must learn these things but is also more likely to be moving on after a few years. While there was substantial agreement that the U.S. industrial employment scene is not paternalistic (as in Japan, for instance), it seemed clear that the industry participants had a strong interest in seeing engineers maintain their professional competence and thereby advance their careers.

As a result of what was considered a productive meeting, USAB is presently considering a recommendation that each IEEE Section establish an industry advisory group. Such groups would foster the exchange of ideas concerning career development and seek ways of matching the content and processes of IEEE programs as closely

as possible to what employers as well as employees consider important.

YOUR LEGAL RIGHTS (AND OBLIGATIONS)

Ethical conduct

A major step forward in dealing with members' legal rights occurred during 1976 when the Institute Board of Directors approved a two-pronged policy developed by USAB concerning the Institute Code of Ethics. The new policy evolved out of the extensive (and sometimes heated) discussions that have taken place among several committees since the Code itself was reaffirmed in 1974. The new policy authorizes machinery for disciplining a member who violates the Code. The actual wording is:

Infractions of the Institute's Code of Ethics by members, when reported to and investigated and evaluated by the Board of Directors, or its designated representatives, are subject to appropriate action by the Institute's Board of Directors on the basis of procedures established by that body.

But just as significantly, the policy continues:

Members who are placed in jeopardy as a consequence of adherence to the Institute's Code of Ethics may be offered assistance, provided that, in the opinion of the Board of Directors, or its designated representative, such assistance is warranted.

This means the Institute can now proceed to devise ways of assisting members who get into difficulties with, say, their employers by following the Code's injunction that engineers have a responsibility to "protect the safety, health and welfare of the public and speak out against abuses in those areas affecting the public interest." Under this new policy, the Institute could, for example, have supplied direct legal assistance to the three engineers who were discharged by the San Francisco Bay Area Rapid Transit District a few years ago. At that time, the IEEE was restricted to filing an *amicus* brief.

Of course, it is now necessary to establish procedures for implementing the new policy, including review boards and so on, and this will be a priority matter in 1977.

Filing amicus curiae statements

Another important policy adopted by the Board of Directors in 1976 concerned the preparation and filing of *amicus curiae* statements. The new policy reads:

Institute statements submitted amicus curiae *shall be confined to presentation of facts judged by the President to be objective, verifiable and properly coming within the purview of the IEEE. Such statements shall be forwarded for information to the Board of Directors immediately after submission to the appropriate court or its representative. The Board of Directors empowers and directs the President, with the concurrence of a majority of the members of the Executive Committee, to decide whether such a statement shall be filed by the Institute in any specific instance.*

By empowering the IEEE President, with the concurrence of the Executive Committee, to provide a court with expert advice in areas that involve matters of principle, this policy made it possible to file an *amicus* brief in the Sperry Corporation hearings, as described in Section 4. This was the first time since the BART case, which involved a nonprofit Government organization, that the IEEE offered an *amicus* brief. We are thus beginning to amass a body of policy and experience that will facilitate similar actions in the future.

When members need help

USAB also handled a number of inquiries during 1976 from members troubled about pension and other matters who felt they were being unfairly treated and needed legal advice. Often our advice was that there was nothing unlawful in the situation they described. But one case in which it seemed appropriate for the IEEE to intervene involved an engineer who was denied unemployment insurance because he had refused to work what he claimed was excessive overtime. The State Unemployment Insurance authorities denied his claim on the grounds that his discharge was due to misconduct. He then took the case to a referee and won. When the employer appealed to the State Unemployment Insurance Appeals Board, the engineer requested assistance from IEEE. At our suggestion, he talked to our attorney, Frank Cummings, who then filed a notice with the Appeals Board that he would represent him and requested the opportunity to file a brief. Almost simultaneously with his actually filing the brief, he learned the employer had withdrawn his appeal, thereby permitting our engineer to receive his insurance.

The employee inventor

Few employee inventors will be surprised to learn that a 1975 survey revealed 43 percent of you are dissatisfied with the existing compensation arrangements, while 55 percent receive $1 or less in direct compensation for your services.

The IEEE has been grappling with this problem for several years, principally by attempting to draft legislative proposals that could be introduced in Congress. But without an overall Institute policy on patent rights, these writing efforts have not gotten very far. Consequently, a different tack was taken in 1976, and it has paid off. USAB representatives drafted an Institute policy position which states specifically that:

In order to promote the progress of electrical arts and sciences, it is Institute policy to encourage the establishment of appropriate incentive systems for the development and disclosure of inventions. Implementation of this policy may include such actions as, but not limited to, improving laws that provide better residual rights for employed engineer inventors, and disseminating more equitable standard Patent Preassignment Agreements.

When this position was approved by the Board of Directors in September it enabled a USAB task force to move immediately on three fronts:

- Drafting patent legislation.

• Promoting greater cooperation between IEEE and other technical societies on patent matters.
• Strengthening the patent sections of the Intersociety Employment Guidelines by proposing that employers establish a "method and formula for compensation over and above salary and fringe benefits," and that employers agree to release an engineer's inventions that are neither useful to the company nor to its competitors (see Section 7 for more on the Guidelines).

On the legislative front, the USAB task force is drafting proposed changes to the existing Federal patent laws that would essentially accomplish two things:

• Limit the inventions to which an employer may obtain title from the employee, thereby preventing, for example, an engineer from being forced to assign away rights to an invention he might have made that was entirely unrelated to his job assignment.
• Give the employed inventor royalties on inventions worth more than $100 000. Such royalties would be at least one half of one percent of the savings or of the net selling price of the items or methods using the invention.

This legislation is being drafted in two forms: as a bill that could be introduced separately in the next session of Congress, and as an amendment that could be tacked onto an existing bill. Which approach we follow obviously will depend on how the legislative climate develops when Congress reconvenes in January 1977.

Either way, we expect important assistance from the American Chemical Society. The ACS has been working with IEEE representatives throughout 1976 to develop a joint position on patents. Resolutions corresponding to the new IEEE policy have been approved by the ACS patent committee and, at this writing, await approval by their board of directors. As the nation's largest scientific society, ACS will obviously be a valuable ally in our efforts to navigate the Congressional shoals.

Modification of the existing patent laws will clearly be another long-term process, requiring a continuous commitment of time and energy by the IEEE. We are convinced, however, that 1976 saw an important start in this direction.

Three handbooks

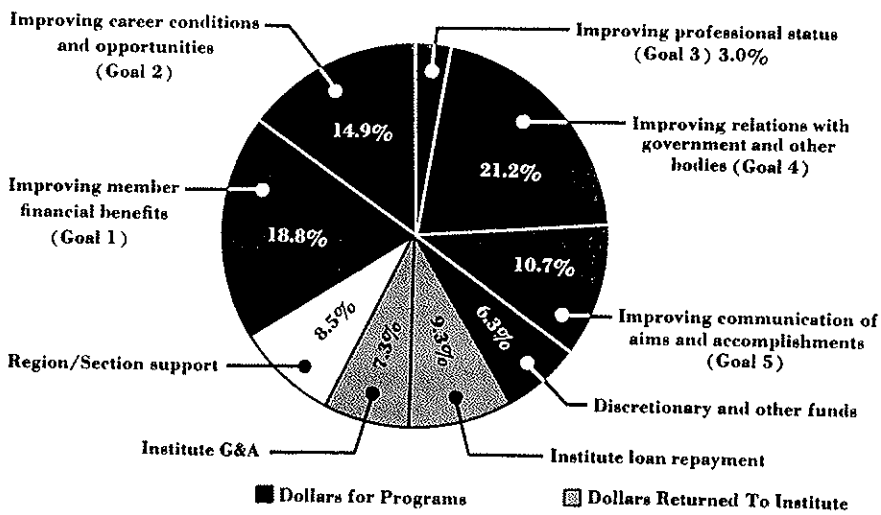
While USAB is working for programs to give the employed engineer specific rights to patents and portable benefits, early vesting for pensions, termination rights, and age discrimination protection, engineers must also be able to recognize when they are being treated unlawfully and to initiate necessary legal proceedings. Further, they must be aware of their responsibilities under these laws in such areas as product liability. Consequently, USAB commissioned the LaVerne College Law School to research and write a report on the legal status of the engineer (SCORE). Selwyn Berg (a law student and graduate engineer) is completing a program covering three major areas:

• Investigating court decisions on the rights of engineers to capitalize on their experience vs. the rights of the employer to protect his financial interest in contributing to that experience. This primarily refers to compensation made under employment patent rights.
• Investigating the liability of the engineer with respect to society in general.
• Reviewing cases involving defamation, fraud, and wrongful discharge, concentrating on employer-employee contract agreements.

Berg's program will culminate in a handbook for IEEE members and other interested groups early in 1977.

Two other handbooks, expected to be available in 1977, are one by Frank Cummings on employment contracts, and another on tax matters by Paul Richter, an attorney, and Paul Opalack, a CPA. Cummings' book provides guidance concerning typical contract provisions dealing with inventions, trade secrets, patents, customer lists, and employment with competitors. The tax book is aimed at the special interests of IEEE members. It includes chapters on identifying and solving tax problems, the audit process, dispute procedures, and part-time, self-employed, and other miscellaneous income and deductions.

Where Your USAB Dollars Went in 1976



7. YOU AS A PROFESSIONAL

Confronting the supply-and-demand issue

A number of IEEE members have expressed concern over their opportunities for advancement and adequate compensation. Indeed, dissatisfaction with electrical engineering and a desire that IEEE "do something" seems even more pronounced than just a few years ago. For example, 54.3 percent of the respondents to the 1975 U.S.

membership survey felt that publishing manpower data should be the IEEE's position relative to the supply of new engineers. Only 11.2 percent voted for attempting to dissuade people from engineering.

We suspect these responses would be less conservative if the same questions were repeated today. For one thing, in August 1976, when USAB asked 2500 randomly selected non-Student members whether they favored IEEE's attempting to regulate (1) the quality, and (2) the quantity of electrical engineers, 66 percent of the 1094 respondents said "yes" to the first question and 50 percent said "yes" to the second. Asked how, 41 percent favored promoting higher accreditation standards for engineering, 29 percent favored promoting universal registration, and 25 percent wanted the technical societies to validate continuing education courses.

There is little question that USAB confronts its most difficult challenge when it seeks to deal with such concerns. Clearly, meeting the IEEE's pledge to work for "a lifetime engineering career with adequate compensation" will involve a good deal more than lobbying for a piece of legislation.

For one thing, it means answering difficult questions about the nature of engineering in today's society: What exactly does an engineering career entail? In what ways can it be considered a profession? To what extent can it be under the individual's control? And so on.

When engineers get laid off, and older ones feel they must look for ways out of the profession, there is a natural demand for "solutions," and proposals ranging from mandatory registration of engineers to tightened college admissions are legion. But close examination of the feasibility of such proposals raises as many questions as it seems to answer. About all one can get a consensus on at the present time seems to be that maintaining competent engineers is in everyone's interest —industry and education as well as employed professionals—and that the IEEE has a clear responsibility to help bring this about. Consequently, in 1976, USAB found itself forced to "begin at the beginning." This meant trying to determine the true extent of the problem and then sorting out some of the principal issues and the ways in which they might be tackled directly.

Government and the demand for engineers

Briefly, it was recognized that *demand* for engineers is largely determined by Government policies in supporting research and development. The IEEE's successful support of the Science and Technology Policy Bill under which the Office of Science and Technology Policy was established in 1976 is thus an example of how the IEEE can achieve meaningful results in this area. USAB representatives worked closely with three Senate Committees in formulating the bill. Although we were unsuccessful in getting "Engineering" included in the title, our proposals to recognize the importance of engineers and scientists as a national resource were incorporated.

USAB representatives also joined other engineering groups in testifying before the Platform Committees of the Democratic and Republican National Committees. John Guarrera called for greater utilization of the nation's engineering and scientific manpower in the formation of national policy, and urged that a science and engineering plank be adopted in the platforms that pledged "support of policies and procedures to increase Federal funding of research and development, with an immediate funding goal of at least 3 percent of GNP." While neither party adopted the 3 percent pledge, we will continue to call for attaining such a goal.

The quality of engineers

As for the complex issues related to "supply," which is better recognized as involving the *quality* of engineers, several meetings were held to thrash them out. The result was we determined that two important issues to address are universal registration, and the process by which individuals acquire the knowledge necessary to practice engineering.

The first issue includes such specific concerns as: eliminating the industrial exemption; revising criteria for the EIT and PE examinations; and establishing criteria for the right to use the title "engineer." USAB has scheduled public meetings in California and Massachusetts for the end of 1976 in order to determine members' views on this admittedly controversial subject.

The second issue involves such matters as: establishing criteria for entrance to engineering schools and for baccalaureate curricula; exploring the need for a lengthier program as well as a higher degree (M.S./Ph.D.) for entry; determining the legal implications of liability from the standpoint of the public welfare as well as product safety; establishing criteria for paraprofessional jobs engineering technologists can perform.

Defining the professional employment environment

Enhancing the status of engineers as professionals requires bringing about some agreement among employers and employees as to the conditions governing such employment. Who should be called an engineer? How much notice should an employer give to a professional employee whom he discharges? How much notice should the employee give when he quits? What are the responsibilities of both employee and employer for the former's professional development? Over the past several years, considerable effort has been devoted to obtaining a consensus among technical societies concerning these and similar questions relating to the mutual obligations between employers of engineers and scientists and their employees. The first edition of the resulting "Employment Guidelines" was released in 1972 and to date it has been endorsed by 28 technical societies and councils representing some 1.5 million professionals. Yet, the IEEE has not been satisfied with the document because, among other things, it lays down desirable general goals rather than quantifiable guides. Consequently, a USAB committee in 1976 approved a series of proposed changes designed to strengthen the Guidelines substantially. Among the changes that have been proposed for making the Guidelines more quantitative are: recommended restrictions on the use of titles denoting professional status; a strengthening of the patent provisions along the lines described in Section 6; and the spelling out of a specific package of benefits that ought to be provided at the employer's cost.

Obviously, one should not overestimate the value of these changes. If approved by the Board of Directors, they merely provide a basis from which the IEEE's representatives to the intersociety board can negotiate. And even if the Guidelines are eventually changed

along the lines we desire, they are still Guidelines. But we believe they are important nonetheless.

First of all, they provide the engineer with a yardstick against which to measure his or her own company in comparison with others. This can be helpful when a person is seeking employment, particularly when it is for the first time and he or she is unfamiliar with industry practices.

Second, it provides employers with a clear statement of what the professional societies and councils consider appropriate conditions for employment.

But perhaps most significant, it provides a basis on which individual societies can establish those employment policies and procedures they deem appropriate for their own fields. Since little could be done without the Guidelines, we feel they may be properly viewed as an essential first step.

Obligations of professionals

Up to this point, the discussion of USAB's 1976 activities has focused on things we believe should be done *for* professionals. However, it is important to remember that there can be no one-way street—a professional has obligations *to* society as well. For members of the world's largest engineering society, these obligations are stated succinctly in the constitutional mandate: "To enhance the quality of life for all people throughout the world through the constructive application of technology in its fields of competence, and to promote understanding of the influence of such technology on the public welfare."

This provides the rationale—if indeed a rationale be needed—for USAB's Congressional Fellow program, for its contributions to such advisory bodies as the U.S. Intersociety Legislative Advisory Committee (USILA), and for its participation, with the Technical Activities Board, in technical projects having particular impact on its professional program.

Fellows. Since this program was started by Congress in 1973, nearly 50 engineers and scientists from half a dozen technical societies have served one-year terms as full-time legislative aides in the offices of Senators, Representatives, or Congressional Committees. The seven Fellows from the IEEE have been deeply involved with energy and related legislation in their work for the House Science and Technology Committee, the Senate Committee on Insular Affairs, the Joint Atomic Energy Committee, and other committees. Their work—and that of the Fellows as a group—has brought considerable praise from Congressmen and, in March 1976, a Senate Resolution was approved calling for the program to be expanded.

The IEEE had three Fellows in the program during 1975-1976, one working as staff director for Senator Robert Packwood's (R-Oreg.) Minority Task Force on Energy Policy, another on the personal staff of Representative Mike McCormack (D-Wash.), and the third on the staff of Senator John Glenn (D-Ohio). The newest IEEE Fellow is Kirby Holt, an engineer with Southern California Edison, who joined the staff of Senator Mark Hatfield (R-Oreg.) in September 1976.

USILA. Volunteers from IEEE join colleagues from other professional societies in providing members of state legislatures with factual technical advice—something quite different from the lobbying most legislators are bombarded with daily. The program began a few years ago in the 11 Region 6 states, with different mechanisms set up in different states to respond quickly to requests by the legislators for technical advice, and also to request action concerning pending legislation from engineers as individuals or as groups. In Idaho, for example, every bill going into the legislative hopper has been monitered, and in California summary data on per-capita energy and land use were prepared and mailed to every legislator. As a result of its success in the western states, where at least six committees are now active, USAB is sponsoring its expansion to the rest of the United States. Planning meeting were held in four Regions during 1976, and a booklet was prepared on how local units can operate commissions or committees in their states.

TAB. Two projects were undertaken by USAB in conjunction with the Technical Activities Board in 1976. These involve support of the U.S. National Committee of the International Electrotechnical Commission (IEC), and support of U.S. conversion to the metric system in electrical and electronics applications. Both projects will obviously help improve the effectiveness and competitive position of U.S. industry.

Here's a recent example of how USAB involvement can pay off handsomely: We provided funds to send a delegate from an IEEE Working Group on CATV Graphic Symbols to a June 1976 meeting of the IEC in Norway where this subject was being considered. Our delegate's presentation produced a complete turnaround in the European position on CATV symbols, with the result that we expect the symbols the IEC does adopt to be identical to those in the IEEE Standard.

8. USAB AT YEAR'S END

In some ways, the major part of what USAB accomplished during 1976 actually lies outside the domain of policy, legislative, and other initiatives described in the preceding pages. It lies in the extent to which USAB was able to transform itself into a mature operating body with a program plan, a staff, and a budget in place, and focused upon an on-going program to carry out its constitutional charge to advance the professional standing of U.S. IEEE members. Frankly, we are proud of the degree to which this was realized.

Getting organized

As an entity which is only four years old, and which became a Board only two years ago, USAB started 1976 with essentially no operating plan, no staff organization, a $100 000 deficit, and a $1 million budget to spend wisely and effectively. Moreover, we faced two serious difficulties. The first is that this profession, and certainly its membership, is enormously diverse. It is diverse in terms of technical interests, job functions, and economic goals. Furthermore, although we are citizens of one nation, there is competition

among companies; although we belong to one profession there is competition among individuals. It is not surprising, therefore, that when USAB set out to focus its attention upon needs that must be met and ways of meeting them, we were faced with a veritable Tower of Babel of opinions, demands, questions, and arguments.

The second difficulty is that USAB is unique among IEEE bodies in that what we seek to achieve is largely outside of our control and the control of the membership. As this report hopefully has made clear, when we want legislation amended, for example, we must embark upon a time-consuming process of persuasion and accommodation. And we must depend upon people who are neither engineers nor IEEE members. Furthermore, all of this must be carried out in a volunteer organization, where leadership of the necessary committees changes every two or three years.

In view of these realities, it was clear at the outset that 1976 would have to be a year in which considerable energy would go into:

- Identifying those areas where the Institute lacked policies that were needed before any action could be undertaken, and, once identified, attempting to develop the necessary policy statements and get them approved by the Board of Directors.
- Developing a specific program plan to implement those policies and conduct other necessary activities.
- Building an infrastructure of staff and volunteers, and establishing a budget that would erase the previous year's deficit.
- Developing a program plan and budget for 1977 as well.

Implicit in all of this, of course, was the need to determine the real concerns of the membership and then to decide which ones the Institute, with its not-unlimited resources, could usefully tackle. As the year ends, we can point to considerable progress in meeting all of these objectives.

- New policies concerning patents, ethics, *amicus* actions, and other matters were approved, and attention can now turn to their implementation.
- A plan was adopted for 1976 setting out five program goals. These involved: improving member financial benefits, career conditions and opportunities, and professional status; improving relations with Government and other bodies; and improving the communication of USAB aims and accomplishments. By year's end, this had evolved into a plan where the first three were considered the goals, and Government relations and communications were looked upon as supporting activities. (Everything discussed in the previous sections of this report falls under one or more of these three goals.)
- An organization of full-time staff and volunteers is in place (based at 2029 K Street, Washington, D.C.) and task forces have been appointed to implement many of the program tasks. Also, we remained within budget.
- But perhaps our most important achievement has been that we are able to enter 1977 with a well-considered program plan and a budget. This will be the first time, and we believe it marks the successful evolution of USAB from an infant that must struggle to get itself organized into a maturing entity with sufficient continuity built in that it can now concentrate its full energies on its real mission: developing and sustaining an environment for a long-term professional career in engineering.

Communications

Clearly, all the accomplishments in the world mean little if members are unaware of them. USAB recognizes this, and also recognizes that past communication efforts have been insufficient. Not only has there not been enough communication *to* members, but there has been no satisfactory mechanism for communicating the views, priorities, goals, etc., of members back to those responsible for developing and implementing USAB programs. Also, there must be communication with employers, without whose cooperation and understanding it would be difficult to implement many of the programs we desire, and there must be effective exchange of information and experiences with other technical societies and professional groups, many of whom share our objectives.

Efforts were made in all these directions during 1976, but we consider them fragmentary starts and recognize that much more will be needed in the future.

- To reach individuals, there were Legislative Alerts (five) and Information Bulletins (two). A speaker's bureau was established that permitted USAB members to address some 25 Section meetings. A revised editorial policy for *Spectrum* will encourage it to publish more news of professional activities.
- Presidents and executive directors of 17 engineering societies were contacted by USAB's chairman, James H. Mulligan, to advise them of IEEE activities and to learn about their programs. A start was made on a program to enlist employer cooperation in career maintenance (see Section 5).
- As of this writing, 134 Sections have appointed Professional Activities Committee chairmen to organize and implement local programs of professional activities. An important "first" occurred in October 1976, when some 35 PAC chairmen participated in a two-day USAB national workshop on professional activities. Held in Reston, Va., the workshop had as its objectives: to bring participants up to date on the status of USAB activities; to examine the role of the PACs in relation to these activities; to stimulate ideas about professional activities projects that can be implemented at the Section, Regional, or national levels; and to build an expanded group of IEEE members who are knowledgeable about professional activities and who can serve as resource people to support other local, Regional, and national projects and meetings. (See photos.)

An important outcome of the Reston meeting was the organizing of task forces to review the preliminary program plan for 1977. At subsequent "town meetings" in several cities around the U.S., the task force chairmen discussed the program goals with members in order that their inputs could be incorporated in the final plan for 1977. We feel this could be an important mechanism for solving a vital communication problem, and we look forward to its greater use in 1977.

For more information . . .

. . . about any program discussed in this report, contact the IEEE Washington, D.C., Office at 2029 K St., N.W. Tel: (202) 785-0017.