

## COMMITTEE on SOCIAL IMPLICATIONS of TECHNOLOGY

ISSUE NO. 6 MARCH 1974

EDITOR: VICTOR KLIG  
497 Park Avenue  
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## Highlight Session ieee intercon'74

### Affluence and Effluence

Must affluence produce undue effluence? Does a society in which almost everyone is "rich" by their grandfathers' standards have to be a wasteful society? Is unnecessary waste caused mostly by lack of forethought, or do some of our unstated values produce the problem? These and other provocative questions will be explored by a panel of four stimulating and highly qualified persons:

WASTE IN PRODUCT DESIGN - Dr. Al Fritsch - Co-director, Center for Science in the Public Interest.

WASTE OF HUMAN RESOURCES - Dr. Victor Paschkis - Founder, Society for Social Responsibility in Science and Prof. Emeritus M. E., Columbia University.

ENERGY WASTE - Dr. Seville Chapman - Director of Scientific Staff, New York State Assembly.

ECONOMICS OF RECYCLING AND GROWTH - To be announced.

ECONOMICS OF ENERGY USE - Lester L. Nagel, EPA, New York City.

#### TO BE HELD:

Monday Evening, March 25, 1974 - 8 p.m.

#### SESSION ORGANIZER:

J. Malvern Benjamin, Jr.  
Bionic Instruments, Inc.

#### SESSION MODERATOR:

Dr. Edward E. David, Jr.  
Executive Vice President, Research Development, and Planning, Gould Inc.  
(Former scientific adviser to President Nixon)

#### PLACE:

Terrace Ballroom  
Statler Hilton, N. Y. C.

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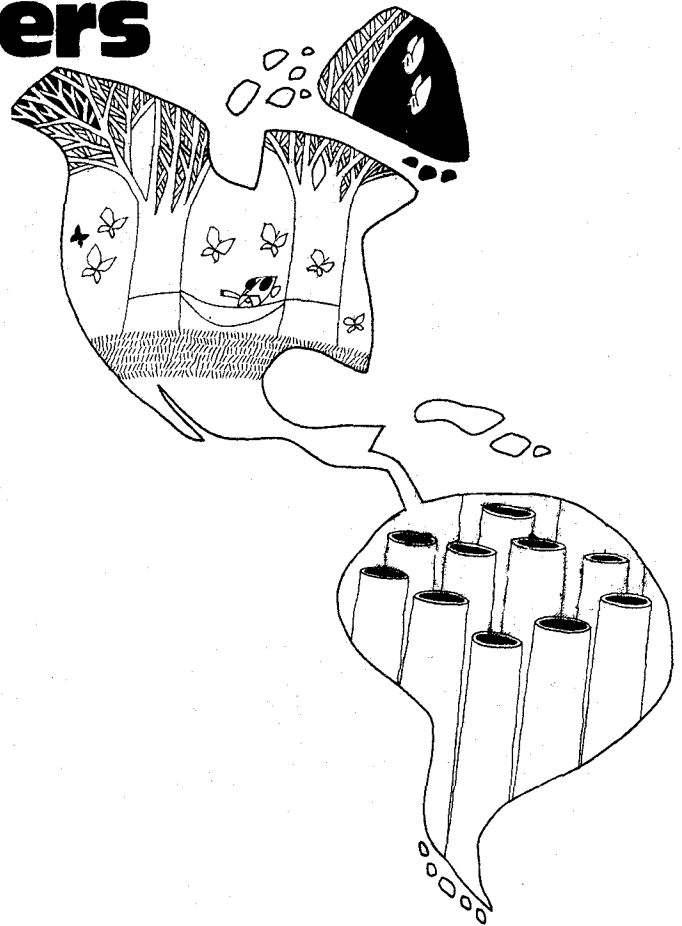
# Letters

EDITOR'S NOTE: The following are portions of a letter sent to Dr. Chestnut, which the writer requested we publish. We invite contributions from all IEEE regions.

"... I am very worried about a part of our chatting, during the dinner on your last evening in Rio. Perhaps I misunderstood you but I have the impression (that) you commented on the advantages of industry transference to Brazil (or, in general, to developing countries). ... I am enclosing a cartoon published in a Rio newspaper, which is sufficiently self explanatory, and contains a humorist approach - something that CSIT should stress continuously from now on ....

Very truly yours,

Olavo Cabral Ramos Filho  
Rio de Janeiro, Brazil



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The editorial staff invites letters and articles from readers. We are interested in publicizing news of all up-coming meetings, study groups, discussions, lectures, or workshops that in any way relate to the interaction between technology and society. Correspondence may be sent to any of the above editors. Material for publication must be received at least by the 7th of each odd numbered month.

Regional associate editors and book reviewers are being sought --interested parties please contact the editor.■

## From the Editor

One of the foundations on which any professional organization rests is the unhampered exchange of information between members. Apparently, there are some within IEEE who still do not grasp this concept.

In past years, certain co-sponsored conference sessions were open only to those holding appropriate security clearance. Recently, this practice has been modified so that a classified "event" is arranged in conjunction with conferences sponsored by some IEEE units<sup>1</sup>. While these events may not be a formal part of the conference program, they become so by virtue of the prominence given them in the official conference publicity. A professional society meeting is hardly the appropriate umbrella for such activities.

There are those who continue to insist that engineers have no business in social matters. Engineers suddenly have no expertise when their endeavors somehow link with non textbook issues. Some IEEE societies go so far as to state that they "... will not as a society become involved in political or social issues."<sup>2</sup> It would be easy to dismiss these views as being vague to the point of absurdity. They are not. They typify the selective manner in which impartiality may be applied. Classified adjuncts to conferences become reasonable, while the discharge of engineers for fulfilling their responsibilities<sup>3</sup> is usually not mentioned at conferences or in publications. Officials may request that a newsletter reprint an article written by a corporate manager in an area of interest to his company<sup>4</sup> -- However, in some quarters, strong rebuttals, articles smacking of

"naderism" or environmentalism, nonabstract examples of ethics, or matters of controversy, are infrequently or inconspicuously aired.

One wonders if electrical engineers really want it this way.

VICTOR KLIG

### REFERENCES

1. WINCON, Los Angeles, March 12-14, 1974, Los Angeles Council and Aerospace Electronics Society. The Conference Program now specifies classified and unclassified sessions, -- a clear violation of IEEE policy.
2. EASTCON, Washington, October 1973, Washington Section and Aerospace Electronics Society.
3. Pugh, E. W., "A Message from the President", IEEE Magnetics Society Newsletter, Volume 9 - Number 3, Sept. 1973.
4. Unger, S., "The BART Case", IEEE CSIT Newsletter #4, September 1973.
5. Ross, P.N., "Development of the Nuclear-Electric Energy Economy", IEEE Power Engineering Society Newsletter, #35, November 1973. This was discussed in an exchange of letters between one of our editors and the PES Newsletter Editor. The PES Newsletter has no "letters" column.

## Editorial

# the troublemakers

GEORGE ROSTKY

EDITOR'S NOTE: The following editorial appeared in ELECTRONIC DESIGN 1-4-74, and is reprinted with their permission.

Troublemakers were always supposed to be the bad guys. They created problems where none existed. They were unpleasant when everything was fine. Or they simply had a malicious streak.

In recent history, troublemakers included reporters who dared to suggest that the behavior of high political officials was less than admirable. But engineers can be troublemakers, too.

This was brought to our attention by reader Clarence Fordham, who sent us Stephen Unger's article, "The BART Case," published by the IEEE Committee on Social Implications of Technology. Unger describes the plight of three troublemaker engineers--Max Blakenzee, Robert Bruder and Holger Hjortsvang--who were fired by California's Bay Area Rapid Transit District for warning that BART's Automated Train Control System was headed for trouble.

These men called attention to mismanagement of the system, unprofessional installation and unprofessional testing. They

argued that reliability would be poor. After attempts to shut them up failed, they were fired. BART--whose record has been less than enviable, its reliability dismal--declined to give the the troublemakers a written reason for their discharge.

Will these men be vindicated? They are suing BART for \$885,000. If they win their suit, taxpayers will lose money in addition to the transit service they're losing because of erratic operation. But what about the guys who covered up for what may have been bad management? What about the people accused of trying to silence the three engineers and discredit them with other potential employers? If the accusations are true, will they be prevented from inflicting similar damage on future systems and on future engineers who have the honesty and guts to speak up? Will they be exposed? Will they be penalized? Probably not. They're more likely to get promotions.

The lesson is sad. If we want to take greater pride in our profession, more of us will have to speak up. We'll have to learn to be troublemakers.

# EJC-Two Views

In a brief article in the April 1 ATP Newsletter discussing his recent meeting with the Engineering Manpower Commission, Arthur Obermayer reached some unflattering conclusions about the interests of the Commission and the motives of its members on the basis of a single brief meeting during which most of the talking was actually done by himself and the other four invited speakers.

With regard to the reasons for declining enrollments and their relation to such factors as individual attitudes, job satisfaction, social conscience etc., these matters were hardly mentioned at the meeting, not because the Commission has no interest or concern about them, but because the topic under discussion was communications between the engineering profession and the public via the mass media. With five speakers and limited time for discussion, the meeting could not possibly have gone into all of these other subjects. The Commission has discussed these problems and many more at its other meetings, and will continue to do so in the future.

As for the charge that the members of EMC consider themselves to be representatives of corporation management, this is obviously unfair to the six college educators, two government officials, two employees of nonprofit organizations, and three self-employed professionals among the Commission's members. Of those who do work for industrial firms, most are well below the top levels of corporate management and consider themselves as employed engineers more than employers.

Finally, no one is elected to the Commission. The members are appointed by the President of Engineers Joint Council (currently a chemical engineer who teaches in a university) as individuals who have a personal expertise in some aspect of engineering manpower and who come from the widest possible variety of backgrounds. No Commissioner "represents" a particular engineering society, company, or any other organization. This is intended to avoid bias by assuring that many points of view will be brought to bear on matters considered by the Commission. The Commission certainly lays no claim to infallibility, but all of its activities are motivated by a concern for the best interests of engineers and their profession.

JOHN ALDEN, Executive Secretary  
Engineering Manpower Commission  
Engineers Joint Council

EDITOR'S NOTE: In the June 1973 CSIT Newsletter, there appeared an article by A. S. Obermayer (reprinted from the ATP Newsletter) discussing The Engineering Manpower Commission. A later exchange of views regarding the Obermayer article appears below (courtesy of the ATP Newsletter). Reader comments are invited.

It is encouraging that Mr. Alden was sufficiently concerned with my April 1 article to respond. This type of friendly dialogue is healthy, and it provides engineers with the opportunity to compare the views and approaches of our organizations.

In my original article, the point was made that EJC professes to represent the views and concerns of the engineering community, but is in fact out of step with the needs and aspirations of most individual engineers.

Mr. Alden's comment that EJC members are appointed is not in dispute; nor is his observation that not all EJC members are representatives of corporate management. At issue is, who speaks for the engineers.

College educators have their own direct concern with the drop in engineering enrollment as it effects the fiscal and academic health of their universities. Government officials tend to reflect the positions of their political leaders, who prefer playing down the unemployment problem rather than facing it squarely. The orientation of those in corporate management is much more a question of professional and/or corporate identification than the level of corporate management. These several vested interests are frequently in conflict with those of the individual professional engineer, with whom they are identified.

Undoubtedly other EJC meetings have discussed aspects of professionalism; but from what viewpoint? Does EJC really understand why most individual engineers today are disillusioned? Why does it not provide positive leadership in such matters as job satisfaction, social conscience, professional development, achievement of meaningful goals and aspirations, job stability and security, corporate responsibility, and long-term employment opportunity?

There is a legitimate role for an organization concerned with the goals of engineering employers, but it is doing a disservice to the individual engineer when it professes to represent him.

ARTHUR S. OBERMAYER, President  
Association of Technical Professionals

## IN DEFENSE OF NOT SO HIGH TECHNOLOGY

While our future well-being on this planet may depend in the long run on significant breakthroughs in the areas of food technology, energy production, transportation and population control, some immediate improvement in our over-all being may result in some cases from the implementation of well known and proven techniques.

This may have the disadvantage of not requiring a significant amount of research with the glamor of novelty and futuristic attached to it, but rather some healthy and mundane engineering.

More specifically, I will choose an example from the area of transportation. The East Coast megalopolis is now traversed by

a vast network of state and interstate highways and is also admirably served by a flexible shuttle-type air transportation system. Recent effort to revive passenger train service in the East has met with limited success in spite of the quality and economy of the service, partly I believe because of the low average speed of the trains (cca. 60 miles / hour.) Other efforts in which passenger service was combined with automobile freight service (Washington, D. C. -Florida) have become quite popular in recent years.

Current research is devoted to future systems with trains traveling at fabulous speeds of 250-300 miles / hour using magnetic levitation or air cushion suspension [1].

Continued...

## AND COMPULSORY PATENT LICENSING

One of the most pressing areas concerning the social implications of technology is the interplay between patent rights, anti-trust laws, compulsory licensing and technological development. Rapid legal changes are occurring on a number of fronts concerned with technology and social need, and it is increasingly difficult to maintain a perspective both of the fundamental issues under consideration and the present state of law and practice in the United States.

The most important of these issues is that of compulsory licensing, i.e. the legal compulsion of an inventor, or his assignee to license his invention to others. There are two basic viewpoints towards this issue.

The first viewpoint, in favor of compulsory licensing, sees it in the best interests of society as a whole, we can consider three situations which illustrate this position.

1. An inventor who develops and patents a particularly useful and important device, may have a difficult time raising capital to manufacture the device himself, and may not find any licensing offers attractive. As a result, the invention lies dormant and is not put to use for the benefit of society.

2. A company may develop and patent a device that is more cost effective than other available products. However, a market study may show that introduction of the device may be directly competitive and detrimental to other of the company's products. A financial analysis may show that the projected earning from the new device would not offset the loss in earnings from the other products. As a result, the product development is shelved and the consumer is denied a more cost-effective product.

3. A company may unfairly benefit from its patent rights by exercising a monopoly power. Simply stated, a company may price its products higher than that necessary to obtain an adequate rate of return, higher than if licensed companies were also producing the product. As a result, the public has to pay an "excessive" price for the product.

The second viewpoint is that compulsory licensing is not in the best interests for society, since it does not encourage technological development. This viewpoint is based on the following observations.

4. A company may commit a considerable amount of capital in the development of a new product. If the company knows that once the product patented, it would become available for

licensing at royalty rates which may not give the company its desired return on overall investment, it would be hesitant to undertake such research and development.

5. A company may develop an improvement to one of its products, and obtains a patent on it. However, if the company is compelled to license it, a competitor company, perhaps with greater resources and a larger share of the market, would be able to license it and incorporate the improvement in its products. Since the net benefit would be greater to the competitor, a compulsory licensing law would not be of benefit to smaller companies.

6. Even if the compulsory licensing law did not discourage technological development, it may very well discourage the patenting of new inventions. If the law would make it disadvantageous for companies to patent their inventions they would seek to protect them through other means such as trade secret and industrial property laws.

The above illustrations are not meant to be hypothetical examples, but are realistic cases of what is actually occurring in industry today.

Compulsory licensing is already in fact law under the Clean Air Act of 1970, the Atomic Energy Act, and the Plant Variety Protection Act. A recent bill by Senator Gaylord Nelson (Wisc) would apply compulsory licensing to the ethical drug industry, and a bill by Senator Henry Jackson (Wash.) would apply to Federally funded energy research.

Compulsory licensing in the electronics and computer industry has not yet reached the point of legislative action, but there is considerable activity in the courts in that direction. Early in 1973 the Federal Trade Commission filed a complaint against Xerox Corporation for alleged anti-competitive cross licensing agreements. A number of technological companies have brought suits in the last year against firms like IBM, Xerox, and Kodak challenging the patent position of these firms, and seeking licenses on key patents. In terms of federally funded research, one significant decision has already been handed down: United Aircraft Corp. must license royalty-free certain fuel cell patents developed by the company in connection with the Apollo program (U.S. District Court-Conn.).

There are clearly many sides to the question of patents and compulsory licensing which should be explored by engineers. The time is long past when these issues may be ignored.

### IN DEFENSE OF NOT SO HIGH TECHNOLOGY

Could we possibly first come down to earth and temporarily duplicate train systems commonly seen in Japan and Europe traveling at 100-120 miles / hour. Not only would such a system provide a very useful system but could also serve as a tool to reeducate our citizens to look upon the train as a live transportation means and thus provide the scenario for the second generation trains traveling at even higher speed.

The real problem is to rally sufficient political support to solve

the problems that we already know how to solve, before or concurrently with embarking on new ventures.

HAIM M. HASKAL  
Dept. of Electrical Engineering  
Tufts University

[1] Proceedings of the IEEE Special Issue on "Ground Transportation for the Eighties", May 1973.

EDITOR'S NOTE: The following is the complete set of resolutions adopted at an intersociety conference at Alta, Utah, September 7-9, 1973. The full report on "Defending Professional Responsibility" was published in our previous issue.

## SCIENTISTS IN THE PUBLIC INTEREST: THE ROLE OF PROFESSIONAL SOCIETIES

### RESOLUTIONS (passed September 9, 1973)

#### TASK FORCE: Clearing House for Public Interest Science Headed by Peter von Hippel

RESOLUTION: "We, the participants in the Conference on Scientists in the Public Interest: The Role of Professional Societies, held at Alta, Utah, September 7-9, 1973; recognize that various governmental and voluntary agencies and organizations often require scientific advice and technical assistance in formulating or implementing policies involving technological components. This need is great and largely unmet. It exists in agencies of executive, legislative and judicial branches of the federal, state and local governments, as well as in national and community citizens' action groups.

Professional Societies have the capability and responsibility to fulfill this need (within guidelines appropriate to their individual societies), primarily by facilitating communication and contact between those of their members with the requisite skills who are willing to help, and the potential clients needing assistance.

We have therefore created a Task Force of members of this conference, and have charged this group with the responsibility of making contact with the governing bodies of the various Professional Societies in order to facilitate the establishment of such a Science Advising Service initially within each Society, but ultimately looking toward the development of an organized intersociety activity. We propose that various Societies consider using as a model the system currently being established by the Biophysical Society in order to encourage compatibility between systems being developed by various groups and to expediate intersociety cooperation. However, we recognize that some Societies may decide to proceed in other ways, and encourage them in any case to devise some mechanism to meet these same objectives."

#### Task Force: Defending Professional Responsibility Headed by Alan Nixon

Resolution: "This conference endorses the development by the Professional Societies of a mechanism\* to protect the professional status and employment conditions and opportunities of engineers and scientists who have encountered problems resulting from discrimination due to the exercise of their constitutional rights and professional responsibilities."

\*Synopsis of the Report by the Task Force on the Development of a Mechanism Whereby Professional Societies Can Defend the Professional Rights of their Members, attached as Appendix:

The program of action should include:

- (a) Establishment of a Professional Relations Committee which is fully supported by the governing body of the society and headed by a strong member. It must be backed up with staff; its role should be to investigate charges of discrimination brought by members in an attempt to resolve differences by consultation with the employer.
- (b) Establishment of a Legal Aid Loan Fund to permit court action by a member when mediation has failed. It is recognized that in most cases legal action is not possible; on the other hand, where landmark cases are possible the Society may wish to join or take over prosecution of the case.
- (c) Inauguration of legislative initiatives to correct inequities where no legal recourse is presently available, e.g. amendment of the N.L.R.A. and Equal Opportunity Laws.
- (d) Provision of follow-through programs to protect employability of members unjustly acted against.
- (e) Issuance of letters of commendation to members who act in the interest of public safety and well-being.

#### Task Force: Congressional Fellows Headed by Richard Scribner

The ASME, AAAS, APS and IEEE have developed methods for the selection, cooperation and coordination of Fellowship programs; AAAS has developed the continuing support program. With this model in mind:

Resolution: "We resolve that each scientific and engineering society be strongly encouraged to establish a Congressional Science and Engineering Fellow Program. Recognizing that coordination among the societies in the administration and other aspects of the program may be essential, we endorse and strongly urge each participating society to maintain its own selection process."

#### Task Force: Public Interest Science Study Projects Headed by Thomas Cochran

Resolution: The conference believes that public interest science study projects are appropriate and important activities for professional societies and should be encouraged and coordinated.

#### Task Force: Role of Professional Societies in Improving Science Advising Headed by Joel Primack

Resolution: Societies should inform their members of the provisions of the Advisory Committee Act of 1972 and develop further guidelines for professional activities in the public interest.

# THE DILEMMA OF THE PROFESSIONAL ENGINEER EMPLOYED IN INDUSTRY

Walter L. Elden P. E.

## Introduction

There must be an ethical responsibility<sup>1</sup> in the practice of Professional Engineering, supplementing corporate profit objectives, if the public is to be afforded safety protection. The Code of Ethics<sup>2</sup> sets forth basic principles of conduct which the Engineer agrees to practice by. Each engineer gauges his particular practice situation against this standard. He faces the possibility of being challenged if he deviates.

Because each engineer is individualistic in his practice, there will invariably be different interpretations made by two or more engineers regarding a common situation. As a professional, each is bound to follow the results of his own judgement arrived at by evaluating the various priorities.

Now, then, this will lead to situations where resolution of differences may be necessary, as one's actions may appear to be a serious breach of ethical conduct as observed by another. Each engineer is bound to bring such matters to the attention of the proper authorities; be it industry, society or the Professional Board of the State. Where improper conduct is found to have occurred, disciplinary action must be taken.

On the other hand, every individual is entitled to receive due process before being convicted. This should apply both in industry matters within a corporation as well as outside. If an engineer is thought to have done an improper act, he should not be judged by management or his associates on hearsay testimony behind his back, and then forever more be treated as outcast. He should be regarded as innocent until proven guilty and is entitled to receive proper due process. Too many times, engineers have been black balled without even being aware that their trials were going on. This discriminatory practice seems to me highly unethical and unprofessional.

## Code of Ethics and Penalties

The State, through its registrations laws<sup>3</sup>, has granted no real rights to the licensed Professional Engineer, but instead has set forth specific responsibilities with liabilities and with penalties which could be levied against him. It seems to me that the very requirement for legally registering professional engineers, who practice corporate engineering, places them in a continual conflict of interest, since by law, also, they are a part of the management team which expects loyal support of profit objectives.

Now let's look at some statements in the Code of Ethics which the engineer is bound to adhere to:

1. "The engineer will have proper regard for the safety, health, and welfare of the public in the performance of his professional duties.

2. If his engineering judgement is overridden by non-technical authority, he will clearly point out the consequences.

3. He will notify the proper authority of any observed conditions which endanger public safety and health.

4. He will regard his duty to the public welfare as paramount.

5. He will not complete, sign or seal plans and/or specifications that are not safe to the public health and welfare and in conformity with accepted engineering standards. If the client or employer insists on such unprofessional conduct, he shall notify the proper authorities and withdraw from further service on the project."

If these criteria aren't enough to make the licensed Professional Engineer a little shaky, how about Section 471.37(1) from the Florida Statutes:

"The fact that individual registered professional engineers practice engineering as defined in this chapter through a corporation or partnership shall not relieve such engineers from personal liability for their professional acts and each such corporation or partnership shall be jointly and severally liable for the professional acts of agents, employees, officers or partners."

An attorney with whom the writer discussed this matter stated that lawyers are faced with the same liability risks and to protect himself he carries one million dollars worth of liability insurance.

Another section of the Law, FS 471.37, states that:

"Any person who violates any of the provisions of this chapter or commits any of the unlawful acts or practices as herein set forth shall be guilty of a misdemeanor of the first degree, punishable at the discretion of the court by a fine up to \$200, or a maximum of one year in jail or both if convicted. If such convicted person be a registered professional engineer, then his conviction as aforesaid shall immediately and automatically revoke and annul his certificate of registration. It shall be the duty of the duly constituted officers of the law of this state or any political subdivision thereof to enforce the provisions of this chapter and to prosecute any persons, firms, partnerships or corporations violating the same."

These criteria seem straight forward enough, if one concludes that the thing he has to do is to adhere to the Code of Ethics, avoid any liability caused by faulty or unsafe design, and not to violate any provisions of the State's Professional Engineering Registration and Practice Laws. But let's consider another set of real constraints also placed upon the engineer working for an employer of a corporation in business to make profits.

## The Employed Professional Engineer's Dilemma

The new Guidelines to Professional Employment of Engineers<sup>4</sup> state that "The professional employee must be loyal to the employer's objectives and contribute his creativity to those goals." It also states that:

"The responsibility of the professional employee to safeguard the public interest must be recognized and shared by the professional employee and employer alike"; and this leads to the engineer's dilemma.

Within an industrial corporation, it may not be in the corporation's best profit interest for an engineering staff member to be a licensed Registered Professional Engineer. This could be argued on the basis that such an individual would have an internal business conflict of interest between supporting the company's profit goals and adhering to the legal code of ethics, to safeguard the public. It is commonly stated in industry that the priorities to be followed are 1) meeting cost, 2) meeting schedule, and 3) meeting performance, in that order. On the other hand, decisions by court rulings have already set precedents stating that profits cannot overrule protecting public safety. If, however, profit is not the practical choice made by the Registered PE in industry, he may soon find out that the company will no longer continue his services. This is the dilemma then in which today's practicing Professional Engineer finds himself in industry. Maybe, through study of this problem there will be found ways in which the law can provide additional practical interpretive guidelines with safeguards for the Professional Engineer, so he in turn will be able to safeguard the public better with protection set by law, without economic pressure extended by management upon him, for acting professionally and ethically.

## National Support for the 3 Ex-BART Engineers Needed

I would like to recommend support, on a national scale, in behalf of the 3 ex-BART engineers' legal suit against BART over their being fired<sup>5</sup>, rather than resigning, when they attempted to correct unsafe BART design practices ethically working within the BART organization. The NSPE, IEEE, ASSE and Systems Safety Society are urged to back these engineers, form a legal defense fund for providing financial support, and attempt to have a landmark legal decision by the court made which would provide the legal protection needed by engineers practicing professionally in accordance with their Code of Ethics. Otherwise, the dilemma caused by profits versus ethics will continue to be prolonged.

## A Code of Professional Integrity is Proposed As The Model of the Future

A three point program has been outlined<sup>6</sup>, proposing a code of professional integrity, to assist the technical professional in speaking out against hazards harmful to the public interests. "First, enact legislation providing for safeguards against arbitrary treatment against employees who speak out as professionals on matters affecting society. Second, organize a solid constituency of professionals for the adoption by management of the requisite due process procedures, which the professional can appeal to or enforce in the courts. And third, have professional societies express their readiness to defend colleagues when they are arbitrarily treated for invoking the professional ethics toward the corporate activity in which they were involved."

## Conclusion

The Professional Engineer faces an ethical compliance dilemma. A proposed Model of the Future may provide the means to a solution.

## REFERENCES:

1. Unger, Stephen H., "Personal Responsibility of Engineers For Their Work," 1972 IEEE Convention Digest, pp. 322-323
2. "Code of Ethics for Engineers," National Society of Professional Engineers Publication No. 1102, As Revised, January 1971
3. "A Model Law," National Council of Engineering Examiners, 1972
4. "Guidelines to Professional Employment For Engineers and Scientists," IEEE SPECTRUM, pp. 57-60, April 1973 and Professional Engineer, pp. 45-49, August 1973
5. Unger, Stephen H., "The BART Case: Ethics and the Employed Engineer," IEEE-CSIT Newsletter, issue No. 4, Sept. 1973, pp. 6-8
6. "The Researcher, Public Responsibility, and Nader's Code of Ethics," Research Management, pp. 4,5 March 1971



# news, notes, & comments

## SCIENTISTS TO THE HELM

The present energy crisis could be predicted (and was) at least a decade ago... Instead of going to the moon, we should have gone to the earth. The energy is there, and it will be produced--but not before we have had to pay a handsome tribute to our Arab energy masters.

How could we avoid similar technological traps in the future? Scientists and engineers must get into powerful positions in the government of the country; a Department of Science and Technology must be formed promptly.

The rank and file of the technological societies must take more interest in the business of politics, and more technically trained individuals must offer themselves as candidates for public office.

From a letter to the Editor,  
TIME Magazine, October 22, 1973  
by Alan C. Nixon, President  
American Chemical Society

## ON THE EDUCATION OF SCIENTISTS

"When by 1890 a third generation assumes intellectual command in Europe, we meet a type of scientist unparalleled in history. He is one who, out of all that has to be known in order to be a man of judgment, is acquainted with only one science, and even of that one only knows the small corner in which he is an active investigator. He even proclaims it a virtue that he takes no cognizance of what lies outside the narrow territory specially cultivated by himself, and gives the name of dilettantism to any curiosity for the general scheme of things..."

"Previously, men could be divided simply into the learned and the ignorant, those more or less the one, and those more or less the other. But your specialist cannot be brought in under either of these two categories. He is not learned, for he is formally ignorant of all that does not enter into his specialty; but neither is he ignorant, because he is a 'scientist', and 'knows' very well his own tiny portion of the universe... The result is that even in this case, representing an apparent maximum of qualification in many - specialization - and therefore the thing most opposed to the mass-man, the result is that he will behave in almost all spheres of life as does the unqualified, the mass-man... Such men of science afford the clearest, most striking example of how the civilization of the last century, abandoned to its own devices, has brought about this rebirth of primitivism and barbarism."

J. ORTEGA y GASSET,  
The Revolt of the Masses

## ETHICS AND TECHNOLOGY

The National Endowment for the Humanities and the National Science Foundation have announced they will support proposals concerning the ethical and human value implications of science and technology. The two agencies said in a joint statement that they will consider "fresh approaches in support of scholarly activities in this field" on a selected and limited basis. The activities to be supported... may include research and other forms of scholarly investigation, together with conferences, colloquia, seminars, and similar activities.

(News item in the Fall 1973 issue of the EDUCOM Bulletin)

## REVISED PROPOSAL FOR A NEW IEEE FIELD AWARD

1. TITLE: IEEE Award for Outstanding Service in the Public Interest.
2. PURPOSE OF AWARD: It is intended that the award recognize the engineer or group of engineers who acted to protect the public interest; particularly when such actions were taken despite personal risk. It is to be hoped, that by focusing on such actions in this manner:
  - a) Engineer (s) will become more sensitive to the need for personal action, when warranted, in the public interest.
  - b) The Awardee (s) will gain recognition, as public compensation for professional injury that might be incurred.

This award is to be made annually as are all field awards.

3. SPONSOR: To be found. Hopefully, this award shall consist of a certificate and one thousand dollars.
4. CRITERIA: Same as other IEEE Field Awards.
5. SELECTION PROCEDURE: Will follow general procedures detailed under "How to Nominate" and "General Administration" in IEEE Awards section of the IEEE Activities Manual.
6. AWARD SPECIFICATION: See item 3 above.
7. COMPOSITION OF AWARDED COMMITTEE:  
Recommend ex-officio members, e.g.,  
Chairman, CSIT; President, Education Group

# CSIT Working Groups and their Chairmen

## ETHICS

Stephen Unger  
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## ENERGY/ENVIRONMENT

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73 Hedges Avenue  
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## URBAN TECHNOLOGY/TRANSPORTATION

(Chairmanship vacant)

## NATIONAL SECURITY

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## COMMUNICATIONS

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## DATA BANKS AND ELECTRONIC SURVEILLANCE

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Highland Park, California 90031

## CSIT **Activities**

### IEEE CSIT WORKING GROUP ON NATIONAL SECURITY

#### OBJECTIVES:

1. To exchange ideas among the members of the WG-NS and with other IEEE members on national security topics.
2. To write articles for IEEE publications on national security topics.
3. To develop position papers on national security topics.

#### TOPICS SELECTED FOR WG-NS ACTIVITY (include):

1. The Energy Crisis and National Security
2. Electronic Warfare
3. DoD Research and Development

Those interested should contact:

Dr. OTTO M. FRIEDRICH, Jr., P.E.  
Engr. - S.B. 114B  
University of Texas  
Austin, Texas 78712

### CSIT WORKING GROUP - DATA BANKS AND ELECTRONIC SURVEILLANCE

#### OBJECTIVES:

1. To exchange ideas among the members of the WG-DBES and other IEEE members on Data Banks.
2. To write articles for IEEE publications on Data Banks and Electronic Surveillance topics.
3. To develop position papers on Data Banks and Electronic Surveillance.

#### TOPICS SELECTED FOR WG-DBES ACTIVITY (include):

1. To show continuing need for improvement of Data files.
2. To produce a non-negative attitude toward gathering and using data; put a stop to the reactionary 'don't-bother-people' attitude.
3. Show how all data needed must be had by whatever method as all data is for the benefit of everyone.

We must help get good laws in force for control of data use. Control is much needed.

For further information contact:

MAITLAND MCLARIN  
17 Briarcliff Road  
Mountain Lakes, New Jersey 07046

# **74 OPEN FORUM**

*Sponsored by*  
**THE IEEE COMMITTEE ON  
SOCIAL IMPLICATIONS OF TECHNOLOGY**

MONDAY  
MARCH 25  
9:30 AM to 5 PM  
TERRACE ROOM  
STATLER HILTON  
32nd and 7th AVE  
NEW YORK CITY

CONTRIBUTED  
PAPERS  
OPEN  
DISCUSSIONS  
MOVIES



PROSPECTIVE SPEAKERS SHOULD CONTACT  
JOSEPH S. KAUFMAN 201 949-5241  
STANDARD VIDEO EQUIPMENT AVAILABLE  
INFORMATION IEEE 212 752-6800 EXT 333

**ieee**  
**intercon74**

THE OPINIONS EXPRESSED AT THIS FORUM ARE THOSE OF THE  
AUTHORS AND NOT OF THE IEEE

March 26-29, New York Coliseum/Statler Hilton



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## THE IMPACT OF TELECOMMUNICATION ON SOCIETY

A tutorial for the Professional

Thursday, April 4, 1974 9 a.m. - 5 p.m.

The purpose of this tutorial is to explore some of the problems and possibilities that will arise as broad band telecommunications systems become realities within our societies. As communication and information theorists and practitioners we ask that if by solving the technological problem, are we at the same time creating much larger social problems? Considering the current trend in the technology of electronic mass communications, to what extent should the technologist also be concerned with the Social Implications of his creations?

### Program

Communications and Municipal Governments by Myron Weiner, University of Connecticut.

Community Disappointment with Urban Cable: A Case Study by David Cantor, Electronics Research Group, Arlington.

Telecommunications for the City by Thomas Hargidon, special assistant to the mayor of Boston.

Electronic Communities: The Building of Communications Environments by Kas Kalba, Kalba-Bowen Associates, Cambridge.

Social Implications of Telecommunications by Mischa Schwartz, Polytechnic Institute of N.Y. on leave at Columbia University.

### Panel discussion

The tutorial will be held on the campus of Columbia University, The International Affairs Bldg., 118th St. and Amsterdam Ave. Room 1511. Advanced Registration can be made before March 28, 1974 by contacting:

Prof. Robert R. Boorstyn  
Polytechnic Institute of New York  
333 Jay Street  
Brooklyn, New York 11215  
(212) 643-4485

The Advance Registration fee is \$35.00 and includes lunch. Checks should be made payable to: New York Chapter, Information Theory Group.

This tutorial is sponsored by the IEEE Metropolitan New York Chapter of the Information Theory Group and is co-sponsored by the Electrical Engineering Departments of the City College of New York, Columbia University, and the Polytechnic Institute of New York, and the IEEE Committee on Social Implications of Technology.

For additional information call Prof. Robert Boorstyn (212) 643-4485 or Dr. J. Garodnick, Goldmark Communications, (203) 327-7270.