

AMERICAN ENGINEERTM

A PUBLICATION OF THE AMERICAN ENGINEERING ASSOCIATION

© 1992 by the American Engineering Association

MARCH, 1992 Volume 2, Number 3

AEA Year In Review - 1991

We began the year with our successful effort to merge with the Committee of Concerned EE's (the late Irwin Feerst's group). The vote to merge was overwhelmingly in favor, with less than four percent of those responding voting against the merger. Employment, pensions and salary led the list of concerns of the respondents.

We established the "AEA Legal Defense Fund" to help defray the cost of potential litigation that we feel would have a broad impact on the engineering community. While the collection was less than anticipated, we raised a little over \$1,300 from April to the end of the year. We heard from nearly as many people seeking help as people contributing, so the need is there! If and when specific litigation is filed, we believe member support will rise to the occasion.

We added two people to the AEA Board of Directors during 1991: AEA Vice-President Richard Tax and Roger Boisjoly, the engineer who advised against launching the space shuttle *Challenger*.

LEGISLATIVE EFFORTS: AEA supported HR-1238 a bill sponsored by Lane Evans (D-IL) that would have stopped the Department of Defense from awarding defense contracts to foreign firms. AEA presented written testimony to the House Armed Services Committee. Incredibly, the bill was bottled up in committee by Nicholas Mavroules (D-Mass) who testified against the bill and also chaired the Subcommittee on Investigations where the bill was heard. We estimated that if only 20% of the twenty billion dollars annually spent overseas for defense procurement was spent in the U.S. instead, it would have resulted in 100,000 jobs being created here. AEA will be seeking other avenues to accomplish this goal in 1992.

AEA presented several sets of written comments to the Department of Labor on immigration legislation passed in 1990 which will have a devastating effect on the engineering profession. We also testified on P.L. 101-583, the law that deals with overtime pay. As AEA predicted, this law has brought on a rash of companies across the country who choose not to pay shoppers a premium for overtime hours. We will continue these efforts here in 1992.

Working with IEEE and Representative Sam Gibbons' (D-FL) office AEA supported HR-2390, a portable pension bill introduced by Rep. Gibbons, and gave written testimony to the Subcommittee on Select Revenue Measures. Our testimony was directed at supporting IEEE's efforts which were mainly for permanent employees and adding language to improve contract engineers' retirement prospects. These efforts continue into 1992.

OTHER PROGRAMS: In 1991 AEA started programs which we consider vital to our efforts. Our "Sponsor a Member of Congress" program has a few people who have sponsored a subscription to the "American Engineer" to their "favorite" legislator. We need many others to make this a successful program.

Our "Grassroots Network" program has a few volunteers but as with the "Sponsor" program, many more are needed to make this a successful program. This program would enlist engineers to carry our "voice" of engineers to legislators in the Member's home district. We believe a Representative or Senator will be more likely to listen to a constituent (potential vote) at home than any organization visiting him or here in Washington.

We were unsuccessful in our attempt to establish a program to use unemployed defense engineers in the rebuilding of Kuwait after the destruction by Iraq during the Gulf War. To gain support for our proposal, we would have had to produce hard data on the number of unemployed engineers. This data did not exist during our effort and probably still does not exist.

AEA IN THE NEWS: While probably not our best year for publicity, we did fairly well in the trade publications during 1991. There were several articles in which we received favorable mention: one in *Electronic Engineering Times* (including one in which we were confused with the American Electronics Association—the brand X AEA); numerous mentions and support from the "Professional Job Shopper", Al D'Nak's contract engineering publication; *EDN* an electronics publication; *Machine Design*; *CE Weekly*, the largest of the contract publications and the *Pascack Valley Community Life* newspaper to mention a few.

BROCHURES: We produced a brochure to inform prospective members about AEA, who we are and our goals and beliefs. The brochure is available to members as an aid in recruiting new members.

FIRST TRADE SHOW: AEA shared a booth with the North Jersey Section IEEE at "Design '91" at the New Jersey Meadowlands Convention Center in September 1991. The booth was donated in exchange for publicity in each group's publication. We were satisfied with the results, considering it was a first-time effort.

We are currently looking at AEA's organizational structure, with the goal of updating our corporate documents to give members the greatest voice possible and still prevent takeover by the academics and corporate management. We would be interested in your thoughts and ideas on this.

Overall, I believe we have done very well during the past year. We will do better in 1992 with your continued support. Our top priority will be in expanding our membership to gain more influence. We must have your financial support to expand! Without reaching our membership goal, we may as well go to our corners and continue to cower to the wishes of others.

Our 1991 financial report appears elsewhere in this publication.
Billy E. Reed, AEA President

Editor's Column

PULLEN MONOGRAPH

For at least 20 years, I've corresponded with a Dr. Keats Pullen who is one of our readers and an active member of other engineering organizations, as well. This correspondence started, when I spotted letters of his published in the electronics trade press. I admired the way he spoke out about the problems of the engineering profession. Keats continues to publish letters and articles on professionalism, one of which appeared in this newsletter.

Recently I heard Keats had written a monograph on electronics circuitry, entitled "Active Devices for Engineering Applications." He's currently offering this monograph for sale. For more information, contact Keats Pullen at 2807 Jerusalem Road, Kingsville, MD 21087.

LICENSURE

The Editor's Column in November '91 "American Engineer" spoke about the benefits of universal licensure and asked if any readers wished to participate in an AEA ad hoc committee to work on ending the industry exemption. I received letters from several readers who are PEs and members of NSPE. They offered to help, and we are working on information-gathering. Since that time, I gave a talk on this topic at the Northeast region of IEEE. (I'm an IEEE Senior Member.) I've been in touch with the IEEE Licensure and Registration Committee, which is also interested in the issue. Elsewhere in this edition is a position paper like the one I gave at the IEEE Regional meeting.

I'm sure AE has readers who are against universal licensure. They say thousands of licensed and unemployed engineers are no better than thousands of unlicensed and unemployed engineers. They say lots of other things as well. Before you pre-judge the issue, please read the licensure article. Then give me lots of feedback, both positive and negative. I could use all the factual information I can get. I could also use volunteers who are interested in universal licensure and in working for it. One in each of the 50 states would help.

FEDERAL EMPLOYEES IN PROFESSIONAL SOCIETIES

The Office of Government Ethics (OGE) proposed federal regulations that would greatly curb the participation of federal employees in the affairs of professional societies and professional associations (like AEA). The proposed regulations, are a part of the new Standards of Ethical Conduct for executive branch employees. They stipulate that federal employees must be authorized by law, executive order or regulation to serve as an officer in a professional association and use government time to administer the internal affairs of that organization or carry out its business. Imagine trying to get a law passed or an executive order or regulation written, so you could be an officer of ASME or IEEE. An additional provision of the regulations says that simply to attend a society meeting on government time, the employee must obtain the boss's approval. The boss's ruling depends on his/her judgment of whether the meeting is 'substantive,' which places the government employee in the position of 'begging' the boss for permission to attend. This limitation of federal-employee freedom is couched in terms of professional 'ethics.' NSPE and IEEE have spoken out against the proposed regulations. In February as a result of such comments, OGE tabled them. But this may not be the last we've heard about these restrictions.

Some professional societies would disappear without volunteer (unreimbursed) participants. The IEEE Board of Directors is unreimbursed, and some Board members spend over 1000 hours/year on IEEE business and receive paid time off from their employers. This has the good result that the societies can continue to function, while dues remain low. It has the bad result (at least in IEEE) that academics occupy a disproportionate number of seats on the Board of Directors. This is because their superiors think it's good for the University to pay their professors for IEEE participation. The interests of academics often conflict with those of working engineers, because academics want full classrooms. This produces bumper crops of new graduates, which curtails career life of working engineers. Richard Tax has spoken in this publication about the problem of academics' interests dominating IEEE affairs. At least one AE reader has stated he's against government employees using tax-

payer money to administer the affairs of professional societies. What do you think?

AEA PUBLICIST

Many of the large engineering societies have professional publicists, who give the society visibility by writing information releases and mailing them to the media. IEEE has an excellent publicist named Pender McCarter, whom I've personally met. AE has reprinted one of his releases, and will probably reprint more. I could perform such a function after a fashion, but I don't have the time, being fully occupied with assembling this newsletter. AEA would benefit greatly by more visibility. It would expand our membership and income, thereby allowing us to attend to more professional problems of engineers and do more lobbying. If there are AE readers who like to write as much as I do, AEA would appreciate their volunteering to write publicity releases. So would the profession.

In December 1990, we polled our readers about their professional concerns and published the results in the April '91 issue of AE. Member concerns in order of importance were: Manpower, pensions, salary, enhancing the profession (which may cover all the others), job security. I'd like to know if member concerns have changed since the 1990 survey. Are there new concerns, or should the priorities be changed? Tell me what you want in the way of career enhancement, and what priorities AEA should have. Write to me.

SUPPORT FOR PENSION REFORM

The cover story of our January '92 issue described provisions of House bills that would bring mobile professionals much closer to having portable pensions. The present version of this legislation is HR.2390, which both AEA and IEEE lobbied for. It's important to get this legislation moving through Congress, so write your two Senators and your Congressman, urging them to support the legislation and, better yet, to become a sponsor. The bill would increase savings of private individuals, which is a major source of investment capital. It would also improve the retirement status for technical professionals in the U.S. Any letter would simply state that the writer is a taxpayer and constituent of the Senator or Congressman. It would urge the recipient to sponsor the bill or at least back it. It would state the benefits that the writer considers favorable to him/herself and to the nation. Address letters to U.S. Senate, Washington, DC 20510 and to U.S. House of Representatives, Washington, DC 20515.

Robert Bruce, AE Editor

AEA 1991 Financial Report

Opening Balance: \$ 2,597.67

Assets:			
Income	\$20,406.00		
Misc. Income	\$ + 643.15		
	\$21,049.15		<u>\$21,049.15</u>
Total Assets.....			\$23,646.82
Expenses:			
Newsletter Expenses (Direct)	\$12,762.75		
Telephone	1,983.03		
Postage	790.61		
Office Equipment	1,272.10		
Office Supplies	460.96		
Other Memberships	48.75		
AEA Legal Defense Fund	200.00		
Bank Charges	110.14		
Franchise Tax	68.00		
Travel	700.00		
Brochures, etc.	460.32		
Postal Permit	75.00		
Loan Repayment	1,072.42		
Misc. Expenses	1,249.44		
	\$21,253.52		
Total Expenses.....			<u>\$21,253.52</u>
			Closing Balance\$ 2,393.30

Age Discrimination And The Engineering Profession

Part 3: The Middle Managers, Fishing in Troubled Waters

Several factors built into the U.S. employment system engender another form of age discrimination.

A. THE FEAR

We will refer to supervisors and managers who directly control the activities of engineering professionals as middle managers. By established and legalized system, the middle managers possess immense power over their subordinate engineers. They are authorized to hire and fire engineers, either 'with cause' or 'without cause.' They assign work, are given the task of leading and supervising, appraising performance and promoting. They are in effect the 'captains' of industry.

Their actual power is so great, that it outstretches physical boundaries and continues after the engineer leaves the firm and ceases to be their subordinate. Holding the legal status of 'employer,' the middle managers are the ones who make recommendations and give out 'references' to prospective employers. They speak about the 'character,' 'personality,' 'qualifications,' 'performance' and 'reason for leaving' of their former subordinate. In short, the assessment given by middle managers for their ex-subordinates constitutes the ultimate and sole authority in the survival of engineering professionals.

Hence, the present system of employment provides middle managers with all necessary tools and legal means to establish total control over their engineers, whether subordinates or ex-subordinates. In fact, the institutionalized establishment gives middle managers the task of 'sponsorship' of the engineering profession. That exercise of power is enveloped in secrecy; it is uncontrolled, unchallenged and unaccountable. As such, it is absolute and authoritarian, with devastating consequences to the profession. The engineer is at the mercy of the employer—his direct supervisor, the middle manager.

Although the employment structure in a society we perceive as 'democratic'—has been established nationally, not every occupation is affected equally. The engineering professionals (perhaps along with their counterpart scientists) are the most oppressed victims of the system, for they lack labor organization.

Helplessness and uncertainty have enveloped the system in fear. Being fired is characterized by some engineers as equivalent to 'capital punishment.'

Since middle managers are at the same time subordinate to their superiors, and so on up through the chain of command, the fear is universal. The austerity of the system dubs the fired subordinate 'unemployable.' To some employees, fear of being fired is the commanding incentive for 'productivity and performance.' It is not our intention to argue with such reasoning, but only to note the reality.

B. INCOMPETENCE

In such a system, 'loyalty' (interpreted as unquestioned submissiveness to superiors) becomes an important factor in the profession and mandatory for survival. Hence the longer the 'loyalty' endures, the more the individual is regarded as reliable and 'qualified' for recognition and promotion. This is the seniority system we are told, a system in which 'proven loyalty,' not proven and long-demonstrated competence, professional integrity or professional achievements are the main qualifications for advancement. Such a system encourages widespread incompetence, corruption and careerism in the engineering profession.

In view of this and with due respect to many competent middle managers, large numbers of incompetent individuals (both engineers and non-engineers) have risen to positions in middle management. This army of middle managers, preoccupied with self-interest and the status quo, aggressively shape the tone, the atmosphere and the setting of the engineering profession in the U.S.

C. SURVIVAL

From fear of having their incompetence exposed, the only way that incompetent middle managers can preserve the comfort and security of their position is to purge competence out of the engineering profession. The concept of age discrimination fits their agenda very well. Engineering competence is dangerous to the survival of this class of middle managers, who regard engineers over 40 as rivals. They call them 'trouble-makers,' and the most notorious of them are christened 'whistle blowers,' (as opposed to 'loyal' employees).

As a 'reasonable' cover story to such characterization, mature and competent engineers are depicted to upper management as 'old,' 'inefficient' and wastefully 'expensive' personnel, in need of weeding out, for the benefit of industry and 'U.S. competitiveness.' Engineering being a complex profession, such reasoning is readily accepted by all those to whom the substance of the engineering profession is inaccessible. Hence, as soon as the opportunity arises, it's easy and practical for middle managers to get rid of engineers reaching the age of maturity and competence, and to confine those who survive to apathy and professional emptiness.

After stripping the American economy of its most vital resource (its responsible, mature engineers), the vacuum thus created is supportive to the theory of 'the engineering shortage.' The importation of thousands of low-paid engineers from abroad is given a solid foundation.

'Trouble-maker' and 'whistle-blower' are not the only sinister terms used to characterize competence in the engineering profession. Middle management also ascribes the term 'over-qualified' to mature and competent engineering professionals. This is a more moderate term and therefore a more widely accepted rationale behind age discrimination.

By Gerald Aksherian

APPLICATION FORM

AMERICAN ENGINEERING ASSOCIATION
P.O. Box 820473, Fort Worth, TX 76182-0473

Name: _____ U.S. Citizen: _____ Naturalized Citizen: _____

Address: _____ Apt: _____

City: _____ State: _____ Zip Code: _____

Home Phone: _____ Work Phone: _____

Engineering Discipline: _____ Industry: _____

MEMBERSHIP FEE (\$20.00)

SIGNATURE: _____ DATE: _____

All members receive a subscription to the AEA publication "American Engineer".

Annual membership begins on receipt of Application. Dues in the American Engineering Association are tax deductible

Page 3 - March, 1992 - "American Engineer"

Dead-End Jobs: A Growth Industry

Education: The trend toward a low-wage, low-skill economy deflates businessmen's calls for better schools.

According to the California Business Roundtable, 50% of the state's executives believe that public education must be "restructured" to improve "entry-level job skills" that are abysmally deficient.

In presenting a roundtable report to Gov. Pete Wilson, Pacific Telesis chairman Sam Ginn complained that his company gave a seventh-grade-level reading test to 6,400 applicants for the job of "operator" and more than half failed. He cited this as an example of business' need for improved public education to provide "workers with skills that will allow us to be competitive into the next century."

What Ginn didn't say was that for the 2,700 who passed the test there were only 700 job openings, paying poverty-level wages of less than \$7 an hour. In truth, the schools now provide PacTel with nearly four times the number of qualified operator-candidates it needs.

It's wishful thinking to believe that we are becoming a technologically advanced economy requiring better-educated students. In fact, we are evolving into a low-wage, low-skill economy that (for most jobs) requires education that is little better than what we now provide.

The Bureau of Labor Statistics expects "computer systems analysts" to be the nation's fastest-growing occupation between 1988 and 2000, increasing total employment by 53%. But growth in this small group means only 214,000 new jobs. Meanwhile, there will be 730,000 additional jobs for sales people, 556,000 for janitors and maids, 551,000 for waiters.

American youth are staying in school longer, with plummeting economic rewards. From 1973 to 1986, the average wage of young male high school graduates declined 28%, to \$10,720. This is hardly an environment that motivates young people to complete high school, much less go on to college. True, some technical fields have shortages of college grads, but overall, graduates now exceed openings in jobs requiring college education by 100,000 each year. In 10 years, 20% of our 34 million college grads will be underem-

ployed in jobs that do not require degrees.

Assembly-line jobs have not been replaced by high-wage, high-tech positions. Instead, job growth has been mainly in retail and unskilled service occupations. In 1974, 46% of employed young black males held manufacturing or craft jobs; by 1986, this figure dropped to 25%. Our declining manufacturing sector pays a median weekly wage of \$415, compared with \$357 for service employment and \$276 for retail. This is why in the 1980s, despite increased educational levels, average hourly wages for Americans fell from \$12.93 to \$11.72.

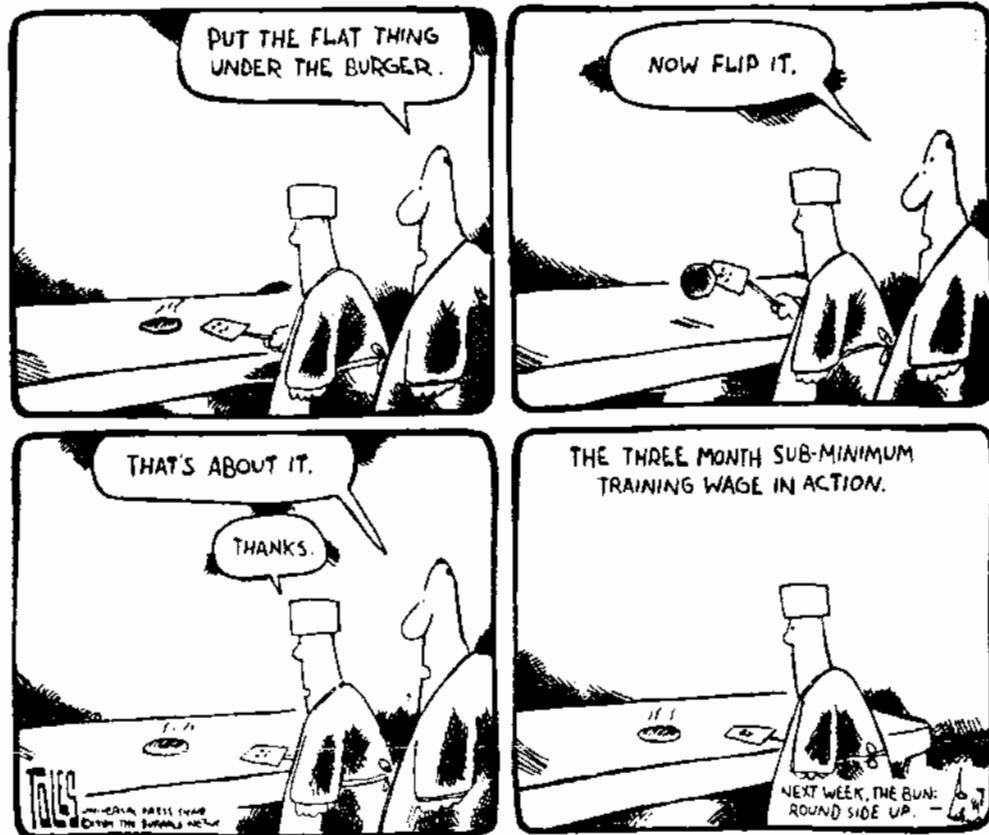
If the business community wants to help bring about the high-skill society it so often talks about, it must provide more jobs that reward and challenge those with a solid high school education. Instead, beating up on public schools has become a substitute for needed changes in economic policy. Germany and Japan, for example, subsidize growth industries and avoid exporting manufacturing jobs in a "free trade" frenzy. They rebuild infrastructure and encourage long-term investment over short-term speculation. They mandate worker participation in factory decision-making to improve quality and flexibility. Such policies create a demand for educated workers, enhancing the motivation of students, teachers and school officials.

Certainly our schools need improvement, and our democratic society should educate all young people to their maximum potential. But our economic crisis cannot be solved mainly by graduating better-educated workers. If education were sufficient, not Korea but India, with its surplus of highly educated workers, would be the economic miracle of Asia. If we continue blaming our schools for the failure of our fiscal, monetary, trade and industrial policies, neither our schools nor our economy can expect to succeed.

Richard Rothstein

Richard Rothstein is a Los Angeles-based research associate of the Economic Policy Institute in Washington and an analyst for the Los Angeles Board of Education.

(This article reprinted with permission of the author, from the Feb. 20, 1991 issue of "The Los Angeles Times.")



This cartoon reprinted with permission of "The Buffalo News" and Tom Toles, cartoonist

Michael Whitelaw For IEEE President

Those of you who are voting members of IEEE might be interested to know that Mr. Michael Whitelaw, P.E., an IEEE Senior Member, is circulating a petition to place his name on the 1992 ballot for IEEE 1993 President-elect. Mr. Whitelaw was 1988/1989 VP of Regional Activities and 1990/91 VP of Professional Activities of the IEEE. This editor feels that the addition of a petition candidate to the IEEE ballot creates diversity of choice. It creates competition and stimulates all candidates, both Board nominated and petition candidates, to offer more campaign promises. Sometimes, candidates even fulfill their promises. Thus AEA is reprinting Mr. Whitelaw's petition in "American Engineer". Readers who are IEEE voting members are urged to sign the petition and mail it back to Mr. Whitelaw.

Petition

WE, THE UNDERSIGNED VOTING MEMBERS OF THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, INC. (IEEE), NOMINATE MICHAEL J. WHITELAW, 1988/89 VP-REGIONAL AND 1990/91 VP PROFESSIONAL, FOR THE OFFICE OF PRESIDENT-ELECT OF IEEE FOR THE 1993 TERM AND OF PRESIDENT FOR THE 1994 TERM.

Name (Please Print)	Signature	Mailing Address (as in IEEE records)	Membership # (if known)	Date
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				

M.J. Whitelaw

If elected, I will serve

Please return to Michael J. Whitelaw, 556 Maple Hill Ave., Newington, CT 06111-3618, by May 15, 1992.

Editorial:

Using The Dividend

The long-awaited peace dividend arrived last week, heralded by President George Bush in his State of the Union address. Wouldn't you know it? The \$50 billion dividend, cut from the defense budget, will mean more unemployment.

The Defense Budget Project, a research group in Washington that monitors defense spending, issued a list of 15 companies that would be affected by the President's planned cuts in military spending. We called a few of those companies to see how the plan might affect them. A Northrop Corp. spokesman said the Air Force has reduced its order from 75 B-2s to 20. As a result, Northrop will have to cut its work force in the B-2 division by 1,500 in 1992.

Another B-2 contractor, Boeing Co. (which builds 60 percent of the B-2 and has 7,000 people working on the program), has similar plans. Boeing Aerospace and Defense Group spokesman Elliot Pulham said that "job reductions will accelerate" from a planned 800 in 1992 to about 2,000.

That's 3,500 new layoffs and all from just one of the projects affected by the cuts and two of the 15 companies. The numbers will be staggering. And a goodly portion will expand the rolls of unemployed engineers.

Now don't get us wrong. We think it's time to wean the nation off a wartime economy. But what we want to know is, who will hire all these people?

As usual, the President would like to leave this problem to the private sector. All we need to do is stimulate the economy with low interest rates and reduced withholding taxes and people will go out and buy U.S.-made products and all these guys will have jobs. Right. An electronic countermeasures engineer will do the dashboard lighting for Ford. Or maybe a propulsion engineer can work on a new blender design.

A "supply-side" fix is not a long-term solution to economic revival in a changing world. What's needed is a plan to migrate from a wartime to a peacetime economy. Speaker of the House Thomas S. Foley made a good start in his response to Bush's speech last week: "We will propose a new commitment to civilian technology and research. For half a century, America has built the best weapons in the world; as we enter the new century, America must build the best consumer and industrial products."

Lay out a program that specifically encourages investment in such products, and let's get started. That is the best hope for reversing the unemployment spiral. The only alternative is another war—and those are getting harder to find.

Margaret Ryan

(Copyright 1992 by CMP Publications, Inc., 600 Community Drive, Manhasset, NY 11030. Reprinted from "Electronic Engineering Times" with permission.)

Why End The Industrial Exemption?

A LITTLE HISTORY

Members of the IEEE Licensure and Registration Committee may remember how back around 1977, the U.S. Activities Board (USAB) of IEEE passed a resolution that supported the idea of ending the industrial exemption. Mind you, the resolution did not say they'd work to accomplish this goal; merely that they were in favor of the goal. The industrial exemption, as you know, allows corporations that produce products sold to the public to utilize non-registered engineers to sign off their manufacturing drawings. On the other hand PEs must sign off drawings for construction projects like bridges, tunnels, roads and buildings.

This mild USAB position caused such a hue and cry in the IEEE that it was rescinded in less than a year. As I see it, USAB exhibited great courage and then caved in. But why did they enunciate this position in the first place? Did the position have some virtue? Ending the industrial exemption has numerous benefits, both to the public and to the profession.

BENEFITS TO THE PUBLIC

Licensure is the hallmark of all learned professions, like law, medicine, nursing, dentistry, architecture, etc. Society has established licensure for the protection of the public health and safety, since license holders must have passed an exam that demonstrates their competence to perform the professional services for which they're licensed. Can you imagine allowing an unlicensed dentist to pull a tooth, or allowing an unlicensed lawyer to plead your case in court? Can you imagine an unlicensed doctor taking out your appendix? Of course not!

Licensure elevates standards of entry into the licensed profession. A century ago, doctors without licenses or advanced learning toured the country and prescribed bogus medicines to cure diseases they did not understand. Medicine back then was not a profession, but little more than a medical circus. Such a situation is now illegal. Licensure is society's acknowledgement that the license holder is qualified to perform the professional service, and that no person without the license can give the service. An engineering license implies that the holder is free to support the public interest by rejecting unsafe designs. Licensure is a legal statement that the public is to be protected. It tends to protect the engineer who tries to protect the public. This is also a benefit to the profession.

BENEFITS TO THE PROFESSION

Licensure benefits the profession, both in direct ways and indirectly. One direct benefit is that it is a filter, which prevents incompetent persons from performing the professional service. This prevents industry from rewarding diligent technicians with the title of engineer and empowering them to design products. Surveys of Long Island IEEE members showed that the majority were in favor of regulating the QUALITY of entrants to the profession.

Since the legal requirement for a license demands observance (and respect) from the employer, it tends to attract more respect to the profession from the general public. This means greater status for engineers. The higher status and the higher quality should result in better remuneration for engineers. It would also afford engineers longer duration of employability. At the present time, many engineers who become unemployed during a recession are unable to reenter the profession, because employers are the sole judge of their competence and employability. The license is a testimony to the competence and employability of the license holder.

ARGUMENTS AGAINST (CON) AND RESPONSES:

CON: Thousands of engineers who earned engineering degrees and have practiced for many years would face great hardship if they had to relearn the subject matter of the license exam and pass it, or forfeit their careers.

RESPONSE: There is a federal law which requires grandfathering, when a new law is passed that threatens careers of established professionals. Universal licensure would apply only to new entrants to the profession.

CON: Engineers not now registered resent the possibility of a new (licensing) bureaucracy with authority over them.

RESPONSE: The objection of a licensing bureaucracy is hollow. Engineers now have several adversarial bureaucracies with power over them. One obvious example is trade associations. They are in a position to set ceilings on salaries and benefits. Another is professional organizations of personnel managers. They discuss uniform standards of remuneration and carry their findings back to their employers. Better to have a new bureaucracy that is favorable to engineers rather than just unfavorable ones.

CON: Universal licensure is difficult to attain.

RESPONSE: So is a raise in pay during a recession or a lifetime career with adequate remuneration and professional treatment. Anything that is really worth while is not easily attained. If engineers want true professional status, they have to work for it. That's what IEEE is for. With adequate dedication, anything reasonable is attainable. Universal licensure is reasonable.

CON: U.S. industry can be expected to fight licensure, since this takes away some of their control over their employees.

RESPONSE: For this very reason, engineers ought to favor the idea, since they're now professionally powerless.

CON: State legislatures will resist the change, since they hear lobbyists from industry.

RESPONSE: Yes and they'll also hear lobbyists from the engineering community. At least during election years, legislatures are sensitive to the public good. Occasionally at other times also.

CON: Industry does not need licensure to judge the competence of prospective engineering employees.

RESPONSE: True, but industry also wants the freedom to hire anyone and assign any title they like to any employee. For the good of the public and the profession, they should not have this much latitude.

CON: Industry does not need licensed engineers to turn out products that are safe and healthful.

RESPONSE: Industry has a poor track record in this regard. Remember the space shuttle explosion, Pinto gasoline tanks that catch fire, DC10 crashes, the BART train over-running the station, thalidomide babies, etc. All these are examples of industry putting the profit motive above the public good. Professional engineers are in a position to correct these sorts of omissions, since they're pledged to uphold the public interest.

CONCLUSION

I see numerous benefits from universal registration or ending the industrial exemption. There are many problems to work out to get legislation enacted. However these are not insurmountable. Application of human intellect has solved much greater problems and can prevail in this circumstance also. I recommend that members of IEEE Section Executive Committees carry this issue back to their Sections and Chapters and gather responses on the need to end the industrial exemption. I assume NSPE is in favor of universal licensure. I have submitted this paper to the IEEE Licensure and Registration Committee.

Robert Bruce, AE Editor

Note: This is not an official AEA position.

Reader's Voice

This column in the "American Engineer" is for readers to voice an opinion relevant to any issues that affect the professional life of an engineer. Articles or letters should be in good taste and not slanderous. Each submission should include the name, address, home and business phone of the writer. Except for short excerpts, we will include the writer's name, city and state (unless the writer requests anonymity). We reserve the right to edit each submission, as long as we don't change the gist of it. We assume that authors who send us material have accepted these conditions, unless they instruct us otherwise in writing.

From T.K. of IN: — "Good Newsletter! Sign me up."

From R.S. of IN: — "Did not want to cut up a great publication, thus this copy."

From P.H. of NY: — "Enclosed are two checks for \$50. One check is to renew my membership in the AEA at the Professional Level. The other is a contribution to the AEA Legal Defense Fund."

From W.G. of MD: — "I am concerned about the myth that there is a 'shortage' of engineers. When we engineers start getting paid what we are worth, the engineers that have left for better rewards elsewhere will return to engineering."

From R.M. of FL: — "With work the way it is I'm about ready to hang it up and retire. Maybe I'll try one more year."

From Dr. A.R. of CT: — "Protect us from the MBA's."

From R.G. of NJ: — "Please renew my subscription for 1 more year...Keep sending the American Engineer and keep after the Congress that does nothing but make it 'worse' for working engineers."

From D.L. of WA: — "I am sponsoring Congressman Miller to receive AE." (John Miller of WA).

From G.D. of MO: — "I am retired. Keep me on your mailing list please. Thanks and best wishes." (Enclosed was a \$100.00 check.)

From W.H. — "Enclosed is \$20.00 for a new membership in your organization. I read a recent newsletter of yours and was very impressed by it's content."

Robert Bruce, AE Editor
P.O. Box 4493, Great Neck, NY 11023

Reach Out

AEA would like to reach people in all engineering disciplines. We would also like to obtain the names and addresses of the publications and editors that serve the many engineering disciplines. To do this, we need the help of our membership. This is an opportunity for you to participate.

Please, clip and mail the masthead with the mailing address and editor's name of your favorite engineering or technical publication to AEA. Eventually, we will be able to reach them and keep them and their readers up to date on AEA events.

Reach Out to your congress, senate, other representatives and the news media. Your "American Engineer" is our way of reaching you with facts, articles and information concerning engineering issues. You can copy these articles and send them to your representatives and the news media to support your concerns.

Reach Out to an associate and encourage them to join and support the AEA. If you're the bashful type, just place your "American Engineer" or a copy in their mail to be read at their convenience. You can also Reach Out to an associate in another department, company, division or state by mailing them your copy of AE. We encourage you to copy AE for a friend or associate in the hope that they will also support our efforts.

Reach Out to the active volunteers that are making this publication possible. Tell them what you like or what you dislike. Provide them with questions, answers and information or just a hand written note of appreciation. Believe me when I tell you that it is important to let your volunteers know that you care.

Reach Out to the following:

Bill Reed, AEA President

P.O. Box 820473, Fort Worth, TX 76192-0473

Richard Tax, AEA VP

General Information

PO Box 2012, River Vale, NJ 07675

(201) 664-0803

Roger Boisjoly PE

Legislation, Ethics and Whistle Blowing

3047, E. Menlo St., Mesa, AZ 85213

(602) 641-0887

Robert Bruce

"American Engineer" publication and related issues

P.O. Box 4493, Great Neck, NY 11023

John Densler

Immigration

42 Maple St., Auburndale, MA 02116

(617) 244-441

Al D'Nak, Contract Engineering

P.O. Box 465, Plainview, NY 11803

Richard Plummer

Anti-Discrimination

P.O. Box 326, Valley Forge, PA 19481

Robert Rivers

Manpower

AIRCOM, P.O. Box 129, Union, NH 03887

R.T. Pinkerton, Staff Cartoonist

Ideas and subjects for new cartoons

P.O. Box 820473, Ft. Worth, TX 76182-0473

Editor: Roger Boisjoly, P.E., is a member of the AEA Board of Directors and AEA Publication Committee. He achieved national fame for his courageous, public testimony about the 1986 Challenger (space shuttle) disaster. In this testimony he described how a contractor for which he worked forced a launch over the objections of the engineers. Roger's first article for AEA appeared in our April 1991 issue.

Past, Present & Future

I've given numerous talks about my experiences with the *Challenger* disaster. After each of these talks, some audience members asked me if I would testify again, knowing in advance the consequences to my career and personal life. My answer is always an immediate YES, not because I'm a masochist, but because I'm a person of conscience with a developed sense of right and wrong. For that reason, I'd find it difficult to have inner peace, if I did not become what others call a 'Whistleblower' and what I call a Truth-teller. Unfortunately I cannot say that everyone who has been branded a Whistleblower has the same conviction as I. I know that unless you have personally experienced the retribution resulting from Truth-telling, you can not judge why someone who did it once would not do so again, or even why some persons would never go public at all.

There has been much written on this subject, and I can personally recommend a book entitled "The Whistleblowers," by Myron and Penina Glaser. It gives detailed insight into the experiences of Truth-tellers. I was surprised to learn that most Truth-tellers recover from their ordeal in 5 to 7 years, but they usually have to find employment in another field. I've also learned that the public, which benefits from truth-telling is generally unaware that we are 'blackballed' and have great difficulty in finding meaningful employment afterward. Some of the public seems to think that employers would seek people like me, because we have a track record of integrity and the inclination to find and report engineering problems for correction. My experience is that just the opposite is true. We are viewed as having violated the corporate code by going outside the corporate organization.

It's almost a certainty that a blackball will follow a serious Truth-telling event, and it doesn't matter if the employer or potential employers initiate it, because the result is the same: NO JOB. Some readers may point to state or federal laws and say Truth-tellers have adequate protection, and may even profit from exposing the truth. This is a myth, because state and federal governments are subservient to industry, since industry offers citizens employment (except for those who expose the truth). I tell you from my own personal experience that the Justice Department isn't concerned with the rights of Truth-tellers, no matter what the factual content of the testimony or the damage that may be caused by covering up the truth. The only way to vindicate the Truth-teller is via the media, or perhaps Congress, if it's a matter connected with a government contract, like my case with the *Challenger* Space Shuttle.

I tell you these things, not to frighten anyone, but to enlighten you, so you'll know how much the deck is stacked. My personal recommendation is that no one should try to bring about change by acting alone. The best and most secure way is to gather colleague support for a particular technical position and then pursue the required changes with a unified technical front.

Remember, those of us engineers who tried to stop the *Challenger* launch were initially successful as a unified group. It was NASA, our customer, who reacted to a no-launch decision. They did so by pressuring Morton Thiokol Management into restoring the launch. Morton Thiokol management held a meeting with engineering not invited. In this meeting, they decided to launch, regardless of our technical advice. Unfortunately those still employed by Thiokol will be accountable for the corporation's error by being targeted for layoff. It's interesting to note that the Morton in Morton Thiokol is the salt company. In 1990, Morton separated itself from Thiokol by forming Morton International. In so doing, they took with them all the money-making divisions of the corporation, leaving Thiokol in debt and in the not-so-booming, solid rocket business.
Roger M. Boisjoly, P.E.

AEA Offers Credit Card For Members

As a new member benefit, you will soon be able to have your very own AEA credit card. With every purchase, you will not only be recognized as an AEA member, but you'll be helping the association at the same time.

Here are just some of the benefits you'll soon be able to take advantage of:

- High Lines of Credit
- Acceptance at over 9 million places worldwide
- Accident Insurance
- One-hour credit line increases
- 24-hour toll-free customer satisfaction

Be on the lookout for a detailed information package that will be mailed to you shortly. The names and addresses of the AEA members will be held in the strictest confidence. For more immediate questions, contact Richard Tax at AEA (201) 664-0803.

Sample Copies Available

Members of the American Engineering Association are encouraged to submit names and addresses of friends and associates who they think would be interested in receiving a sample issue of the "American Engineer" newsletter.

Names should be sent to AEA at the address listed below.

BOARD OF ADVISORS

Hon Tom Vandergriff, *Former Member of Congress*
Jerome M. Zeifman, *Former General Counsel*

House Judiciary Committee

Johnny W. Richards, II, *Attorney and Counselor at Law*

Tommy Grant, *President Grant Fasteners*

Maj. Gen William P. McBride, *U.S. Air Force Ret.*

Ms. Nell E. MacCracken, *Consultant*

Al D'Nak, *President Alnak Publishers*

Norman G. Cornish, *Past President*

Nat'l Council Industrial Defense

PUBLICATIONS COMMITTEE

Billy E. Reed, *President*

Richard F. Tax, *Vice-President*

Robert Bruce, *Editor*

Michael Perugini, *Publisher*

Roger Boisjoly, *Legislation*

John Densler, *Immigration*

Al D'Nak, *Contract Engineering*

Richard W. Plummer, *Anti-Discrimination*

Robert A. Rivers, *Manpower*

R.T. Pinkerton, *Staff Cartoonist*

AEA

P.O.Box 820473

Fort Worth, TX 76182-0473

FIRST CLASS

U.S. Postage

PAID

Permit #32

Mt. Arlington, NJ 07856