

AMERICAN ENGINEERTM

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"Call To Arms"

The *Washington Post* of March 3 reported "Dramatic cuts in defense spending, along with intensified competition on many aerospace fronts, threatens jobs and upward mobility for generations in the Detroit of the aircraft industry—Southern California." Palmdale California Mayor William Pete Knight, a former test pilot recalls, 'When one company was down, another was up, and the workers just moved over.' 'Now, if a guy loses a job in the aerospace industry, that's probably it', said Vern Lawson, editor of a local newspaper."

The February 14, 1992 issue of the *Washington Post* indicates "As many as two million civilian and military jobs will be lost by 1992 even if Congress does not cut further than President Bush's proposed cuts in the defense budget." Senate Armed Services Committee Chairman Sam Nunn (D.-Ga) has concluded. And aside from suggestions by Nunn and a few others, there is no short-term or long-term plan for conversion of these jobs, skills and resources to domestic purposes."

According to the *Aerospace Daily* of January 23 "sharply constricted defense budgets will mean industry shouldn't count on the Pentagon to either buy American or keep any particular manufacturing capability going in the U.S.," Defense Secretary warned yesterday."

Here's what's happened to one small U.S. business!

Schweizer Aircraft Corp. of Elmira, New York announced May 8th that it had officially protested the US Air Force decision to award a contract to Slingsby Aviation, Ltd., of Kirbymoorside, England for the USAF Enhanced Flight Screener Program (EFS). Schweizer's protest, filed with the US General Accounting Office, requests that the Air Force immediately direct Slingsby to cease contract performance while this protest is pending.

Schweizer Aircraft's protest is based upon the following considerations:

A. Had the Air Force followed the announced evaluation criteria, Schweizer Aircraft would have won. Schweizer's EFS aircraft met or exceeded every requirement and specification stated by the US Air Force in its Request for Proposal. Schweizer's proposal was evaluated by the Air Force as "excellent" and received high ratings in Technical/Operational Utility, Management/Schedule, and Logistics Support areas.

B. Schweizer's proposed EFS aircraft far exceeded Air Force requirements for aircraft performance, service life, reliability/maintainability, and safety/crashworthiness. The Source Selection Authority was apparently not presented this information.

C. Schweizer Aircraft's proposal was rejected despite the fact that its price was \$4.5 million lower than that of Slingsby. Slingsby's price was \$54,837,153 or 8.9% higher than Schweizer's. Schweizer's believes its most probable life cycle cost for a twenty year period was also significantly lower than that of the Slingsby aircraft.

D. Slingsby was selected with no apparent consideration of American jobs and taxpayers' money. Of the four final competitors, Schweizer Aircraft was the only company that would manufacture the entire aircraft in the United States. The deep recession facing the US aircraft manufacturers has forced Schweizer to lay off 168 employees during the past six months (30% of its work force). The majority of these employees would have been recalled if Schweizer had been awarded the EFS contract. Despite the current sensitivity towards a Buy American philosophy, the US Air Force chose to award a contract to an English company that will manufacture the

majority of the aircraft and subsequent required spare parts outside of the US. Schweizer employs a UAW work force.

E. Schweizer is classified as a small business by the US government. No apparent consideration was given to Small Business contract clauses.

F. Schweizer Aircraft is a family owned aviation company founded in 1939 as a manufacturer of sailplanes. Today Schweizer produces the 300C helicopter, the Ag-Cat agricultural aircraft, surveillance aircraft and subcontract components for many major aerospace companies. The Company's new turbine helicopter, the Model 330, is slated for certification and initial production deliveries later this year.

This is an outrage! It's one thing to reduce defense spending domestically, but it is quite another to reduce domestic spending while continuing to spend billions overseas. We have written about this issue for several years now. In fact, the basis of the lawsuit against the Department of Defense, which we supported and urged you to support, was for this very practice. The Evans bill we encouraged you to support would have made it much more difficult for DOD to "sell us out" in this way.

How many more American jobs must be lost before the engineering community joins together to establish an organization which is able to speak with one very forceful voice?

It's time we wake up and understand what is happening to us. We have tens of thousands or, perhaps hundreds of thousands of aerospace and defense workers who have been put out of work by the economy and the reduction in defense spending. Whether you work in defense or not, these practices affect your ability to earn a living and your ability to remain employed. If you doubt this, consider that you received an average raise of 1.4 percent last year and more of you were unemployed than in any previous year.

What about our technical societies? Won't they help? I don't know of any of the old line technical societies, other than IEEE who even has an entity within their organization devoted to professional issues. IEEE prides themselves on being a "transnational" organization so I doubt that much help will filter through their leadership. ASME, NSPE and the other technical societies seem to be more interested in keeping the pipeline full than the quality of jobs within the profession.

This leaves AEA as the only national organization devoted exclusively to improving your profession. We can make a difference, we can stop these outrageous practices, but we can't do it with a thousand members! We can't do it with a \$20,000 a year budget! AEA is your organization, it will only be as strong as you make it. What can you as an individual do?

Start by contacting your Representative and Senator's offices. Build a relationship with their office. Try to contact them at least once a month. Make a copy of AE and sent it to your members of Congress each month. Praise them when they do something you agree with; gently "correct" them when they do something to harm our profession.

Express your concern about the direction of the profession in such areas as immigration, loss of our industrial base and the accompanying loss of jobs, federal spending overseas while hundreds of thousands of citizen workers remain unemployed. Jobs must be our number one concern! Without work, a PE license or better retirement benefits are useless.

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We have only two needs; membership and money. You can help by sending AEA as many names and addresses (including correct zip codes) of other engineers as possible. Do this often! Talk to your co-workers about the professional issues. Help us by recruiting one new member each month.

I can't make it happen and our staff can't make it happen, it's up to you. It's old and it's corny, but it's true; if you are not part of the solution, you are part of the problem. We are our own worst enemy.

Support AEA at the highest membership level that you can.
Billy E. Reed, AEA President

19,000 EE Jobs Lost In 1991

Declining defense expenditures and a recession in the nation's economy are responsible for the loss of 19,000 electrical engineering jobs from 1990 to 1991, according to Robert Rivers, editor of the "Engineering Manpower Newsletter." In 1990, 581,000 engineers were employed; in 1991, 562,000.

In contrast, engineering employment expanded by 10,000 jobs on average per year from 1986 to 1990, 40,000 per year from 1982 to 1986, and 13,000 per year from 1972 to 1982. For more information, write Rivers at Box 129, Union, NH 03887.

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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 J.B. of MO: - "An *Electronic News* editorial by Jack Robertson entitled 'Black Storm Rising' (2/3/92, pg. 9) debunks certain proposals for salvaging the moribund defense industry.

(From *Electronic News* editorial) 'One ill-advised concept is that defense firms can simply diversify more heavily into commercial business...there are already many hungry entrenched commercial vendors in almost any market a defense firm might want to enter. The second DOD fairy tale is that the budget can be cut by bringing weapon systems to the prototype state and deferring production until needed... It is only when major weapons enter the pilot production phase that the learning curve is far enough along to build a viable system. Industry and DOD have long had major problems trying to move systems from development into production, even in the present program continuum... If the DOD is willing to pay a price for prototypes that will return a profit to industry...then the cost might be as high as if the DOD went into production with the system anyway.'"

Editor: Mr. J.B.'s introductory statement seems to imply that the moribund defense industry does not deserve to be salvaged. If that is in fact his sentiment, I must point out it is not mine. 'Billions for defense; not a cent for tribute' is an outmoded attitude, but zero for defense does not measure up either. The sad part of the defense industry shrinkage is that the administration, while advocating deep budget cuts, offers no plan for saving the corporations involved or for employment of the displaced workers. This is *laissez faire* at its worst. I read more and more editorials that advocate industrial planning, which the administration rejects. Some will appear in AE.

From L.F. of CA: - "The prime minister of Japan, Kiichi Miyazawa, seems to have the mistaken idea that the U.S. has a shortage of engineers. We wonder where he could have gotten such a ridiculous idea. Maybe from the National Science Foundation or the U.S. Dept. of Labor or Betty Vetter or the old-line engineering societies or the American Electronics Association.

"According to a *Los Angeles Times* article, entitled 'Miyazawa Fails Homework on Grad Students' (p. A13, Feb. 4, '92), Miyazawa claimed that many American college graduates '...landed high paying jobs on Wall Street' and as a result '...the number of engineers able to make products has fallen year after year.' However, the article notes 'according to the Princeton-based Educational Testing Service, the number of Americans taking the engineering test for graduate school rose to 17,199 in 1988 from 8,122 in 1977. This suggests that the number of advanced-degree engineers has been rising.' We might add there are many other statistics that suggest the number of American engineering graduates in the workforce has been exploding, not just 'rising'.

"The *Times* article also notes that Miyazawa was wrong about Wall Street. '...while the number of students applying for MBA degrees rose in the 1980s, Wall Street investment firms have been hiring fewer of these graduates.'" Editor: *The American Electronics Association is a trade organization with corporate and university members and should not be confused with the American Engineering Association.*

Editor: Below is a letter from an AE reader, Frank Smerke of Santa Monica to Mr. Merrill Buckley, IEEE President.

"Dear Mr. Buckley: The ugly behavior of those advocating the theology of 'Engineer Shortage' has not moderated. (See "American Engineer", June 1992 issue). I assumed it would die down after *EE Times* reported the scandalous shenanigans of NSF (National Science Foundation) which were brought out in Congressional hearings—but it has not done so. Only moments before reading AE, I read in the *L.A. Times* a letter from a staff member of San Diego State University, castigating the University for a cutback in its Aerospace Engineering Department 'in the face of an engineering shortage'.

"In addition to the outrageous behavior of D. Allen Bromley reported in AE, the Governor of South Carolina used C-SPAN to tell the world that industry growth in his state was inhibited by an 'extreme shortage' of engineers. I sent him several FAXes and made phone calls, asking to be put in contact with those 'industry executives' whose engineering manpower requirements we could fill (with unemployed engineers). He would not respond. I even had Ernest Lendman of Lendman Group (a technical training organization) try to contact Carroll Campbell. Ernie got no response.

"Unless a prestigious professional society comes out with a hard-hitting public announcement countering those false claims, the claims will continue to be perceived as true.

"I believe this topic should be put on the agenda of the next IEEE Board (of Directors) meeting. In both of my letters published in *IEEE INSTITUTE*, I advocated this, and I spoke about the misappropriation of over \$100K of IEEE funds to run ads praising U.S. engineers for the Desert Storm victory. (See Reader's Voice, AE June '92 issue.) I recommended that IEEE spend a like amount to dispel 'shortage' claims once and for all.

"Now if IEEE does not undertake a substantial effort to dispel this long-term, deadly threat to the welfare of its members, and do it soon, then IEEE does not deserve the continued support of its members. Both the society and its members suffer from this insensitivity on the part of IEEE management. Please put this matter on your front burner."

From F.D. Clarke of Arlington, TX: - "It is not at all surprising that Professor Bromley gave the answers you quoted in the June issue (of AE), regarding the alleged shortage of engineers. What else would you expect a member of the academic community to say? College presidents have been singing the same tune for years, while at the same time, trying to educate the world with our tax money.

"What they want is more students, more classrooms, more teachers and, of course, more money. Until our politicians quit listening to self-serving academicians like Professor Bromley, nothing will change. Asking Professor Bromley if there is a shortage of engineers is like asking the fox if he will stay out of the hen house. What could you expect but a lie."

Robert Bruce, AE Editor

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Are You Vested?

Are you fully vested in your employer's pension plan? No? Have you recently lost a job just before either partial or full vesting? If so, this may be important to you.

When an organization accepts you as an employee, under the law, they can and DO set aside funds whose TAX-EXEMPT purpose is to cover their pre-vesting contribution to your future retirement. These funds should be placed in escrow in your name, and should be inaccessible to your employer without specific and express authorization from you.

Too often, corporate leaders, recognizing the value of the corporate contribution set aside prior to vesting, will arrange to terminate engineers (the 4.9 years and out syndrome) prior to the point of vesting. They can then by legerdemain get those funds for their own bonus purposes. They are too short-sighted to see that they are wasting long-term value in a way that can lead to bankruptcy.

This process, when applied to engineers, not only destroys the most productive element of our society, but also destroys the incentive to create and invent. The problem is compounded by the expectation that engineers MUST be team players. To an extent, engineers should be team players. However, this reduces an engineer's ethics to those of an MBA or corporate lawyer—often to ZERO. This leads to catastrophes like Bhopal, Chernobyl, the Pinto, the Challenger, the AA DC10 crash near Chicago, the UAL DC10 crash in western Iowa, just to mention a few.

Our economic adversaries overseas are WELL AWARE of this problem. They recognize that the value of motivated engineers can increase faster than costs increase. They encourage and reward creativity and ethics. WE DON'T.

The result is that we're destroying our ability to compete. Let's hope it isn't too late to correct the situation.

Dr. Keats A. Pullen, P.E.

Productivity And Rewards Are Inseparable

Churchill's maxim that democracy is the worst form of government except for all the others begs for application to capitalism, that treacherous "system" of pseudo-scientific anarchy. It is the worst economic contrivance ever devised by the witless mind of man except for his other counterfeit universalist schemes, like Marxism.

In few places does the fatuous notion of the "invisible hand of the market" wreak more havoc than in the roller-coaster aerospace industry. Once again, hundreds of thousands of society's most talented, creative and productive people are barbarous sacrifices to the philandering market that capitalists so love to extol. "Market forces" are a convenient abstraction behind which corporate suites and government echelons can hide from responsibility for the tragic toll in careers destroyed, families torn asunder and communities impoverished and riven by cruelty.

Obsessed with the bottom line and the short-term, executives and their senior managers along mahogany row rearrange organizational boxes on ubiquitous charts, oblivious that shoving the best and the brightest over the cliff costs far more than it saves in money and productivity.

When the accountant's mentality prevails, valuable resources are lost in the quest to protect the corporate entity at any cost. Valuable people, the ones who generate the innovative ideas and carry them to fruition, get lost in the mayhem. Damagingly overlooked is the fact that a company's future hinges on retaining a "core competency." That means people.

Also forgotten in these frantic times is the concept of rewards for productivity—the ideas, the commitment, the dedication, the long hours and the schedules met—during better times. Talent that was assembled, sometimes at great cost, during the heady days of Reagan defense budgets and soaring airline expansions, for example, is now at great risk.

Boards of directors, executives and middle managers need to be farsighted enough to recognize the opportunities in these hard times. Talented individuals they might never have attracted during the rosy years are becoming available. Now is an excellent time to structure compensation packages and career growth paths that first stimulate, then reward innovation, teamwork, and group productivity. But a positive, team-oriented environment needs to be nurtured and encouraged. Total Quality Management concepts must be backed by bucks, not lip service.

As aerospace and defense companies restructure in the new business environment, smart managers will find ways to keep their best people, not shaky reasons for getting rid of them. And they must consider compensation an inseparable part of their corporate strategy; not just pay, but ample fringe benefits and intangible rewards to attract the bright minds that will fuel the next economic boom.

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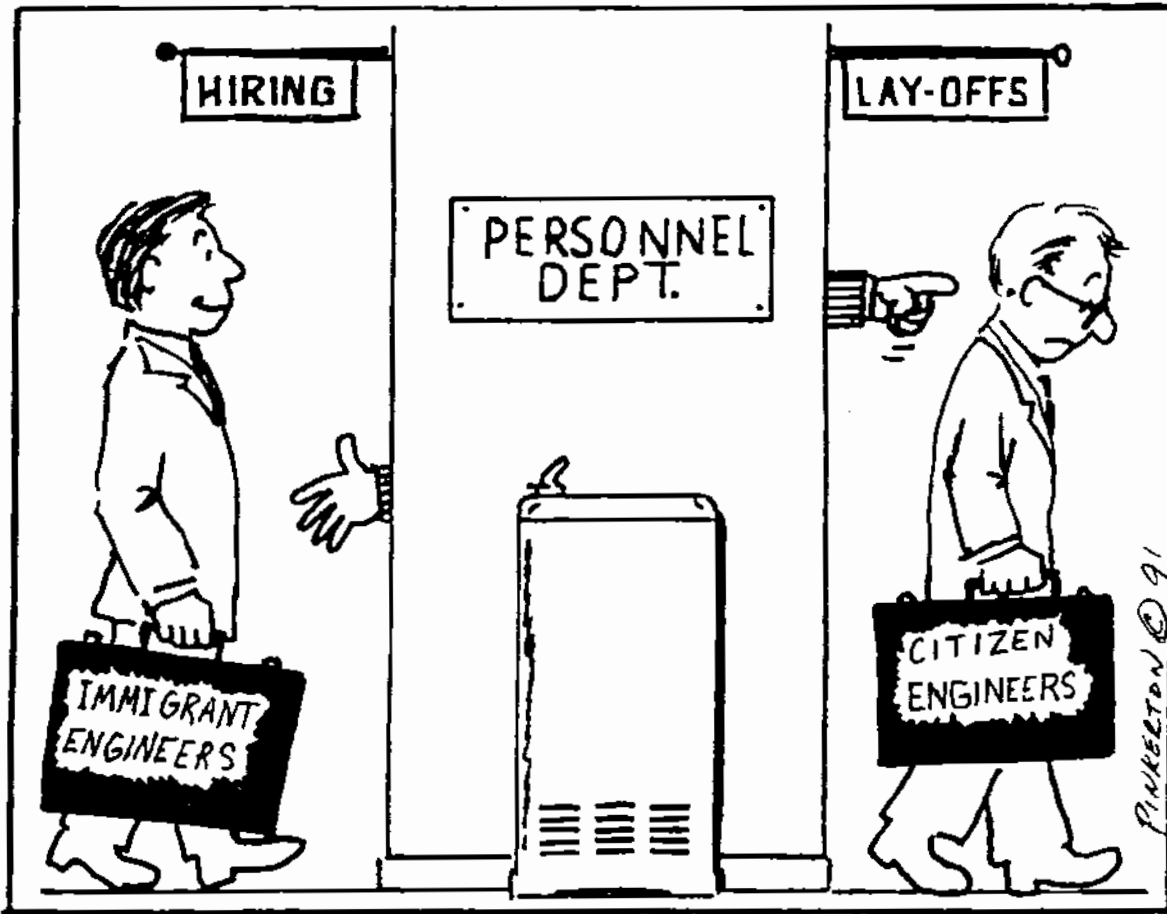
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"IF YOU ALWAYS DO WHAT YOU ALWAYS DID
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IT'S TIME FOR A CHANGE

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ENGINEERING CAREERS and PROFESSIONAL SOCIETIES

By Richard F. Tax

Vice President, American Engineering Association

*Presented June 26, at the 1992 National Convention and Student Conference
for the Society of Women Engineers, Orlando Florida*

Introduction

Background First, I would like you to know that I, and others, have taken a positive approach to enhancing the engineering profession through the traditional channels of the Institute of Electrical and Electronics Engineers (IEEE). During this period I have served IEEE at the Section, Council, Region and National level. This participation has given me the opportunity to work with the finest people in IEEE and the engineering profession.

Goals My goals have always been the same: To strengthen the bond between the members of the engineering profession; To improve the economic and technical health of the engineering profession; To enhance the career of the members of the engineering profession. Although, working through IEEE has been a warm, friendly and rewarding experience, I must conclude that it has been as productive as shoveling sand against the tide with a pitch fork.

Engineers have contributed to placing astronauts and equipment in space and deserve some credit for a decisive victory in Desert Storm, yet we have difficulty in catching the attention of a single congressman or senator sympathetic to our concerns. Why can't we reach our representatives? Is there a reason?

Engineering Careers

Function An engineering career is rather unique. Engineers are **problem solvers**. Engineers turn words into components, sentences into functions and paragraphs into systems. Engineering is the work of professionals who answer to the laws of mathematics, physics and nature and apply them to the solution of technical problems. When the problem is solved, the synthesis complete, our task is finished; we must move on to new problems.

An engineer is one who **does** engineering and not a person that only holds a degree in engineering. The function of the engineer is to design him or herself out of a job. In the 1960's, when you finished a job, there was another good job behind it. We had engineering support people, the country was productive and engineers had an opportunity to practice.¹ In today's low engineering demand economy, covering most of the past 30 year period, the theme has been; first one finished - first one fired. These conditions deprive engineers of an opportunity to practice their profession and thus, deprives them of a profession. Many of our young engineering graduates are not able to enter the engineering profession for which they studied so hard.²

Needs Engineers must practice engineering and keep involved in the solution of engineering problems to enhance their skill level and their engineering capabilities.³ If engineers want a lifetime profession in engineering they must have an opportunity to practice their profession. Good engineering practice and judgment are derived from in-depth experience and are paramount to the solution of technological challenges. In order to satisfy these needs our engineering skills must be fully utilized and this requires a manpower balance, i.e., a balance between the supply of engineers and the demand for engineers.

We need productive engineering jobs and development programs to stay sharp and competent. Our industries need incentives to fund these programs and we must also have the support of the government. In order to achieve this we require qualified, dignified and credible representation. We have not been getting this representation from the old line engineering or technical societies. This applies to all engineers in all engineering disciplines.

Engineering Societies

Goals The original goals or directives of IEEE were in the technical and educational areas; very similar to other 'engineering' societies. During the U.S. engineering or High Tech recession of the 70's, IEEE added a professional agenda to its technical and educational efforts. We moved into the professional arena to solve our career problems. We thought these new goals and directives were to improve the engineering profession. Obviously, we must have been mistaken. Nothing improved.

Efforts With the hope of improvement, many of us became involved in professional activities thru IEEE's Professional Activities Committees for Engineers (PACE) and a new entity known as the United States Activities Board (USAB). We started a PACE Conference that occurred each Labor Day weekend. We were to meet every year at this 3 day conference to address professional problems and attempt to enhance our profession. During the year we would work to solve the problems. Some of the primary subjects were: age discrimination, pensions, unemployment, underutilization of engineers, communications, patent incentives, importation of engineers, career enhancement and more. We even had a Committee for Professional Opportunities for Women (COMPOW). Are things any better today?

We grew and lost. We grew some more and lost some more. We expanded into five (5) councils, some 30 committees and hundreds of volunteers (some were paid). Our new found solution to professional problems was funded by U.S. IEEE member assessments. At a current \$22 assessment per U.S. member, USAB runs on better than 4 mega-bucks per year. Almost 20 years later, 60 million dollars spent and IEEE has not improved the profession one little bit.

Today I believe USAB produces more problems than it solves. USAB or IEEE-USA, as the operation is now called, is dominated by members that are not really concerned about the engineering profession or our professional needs. More money is spent on keeping the "pipe line" full and recruiting students to the engineering schools than is spent on promoting opportunities for engineers. Obviously, the engineering community and IEEE's members are no better off today than they were in 1973. So, how and where did we fail?

Communications Frank Lord developed a publication called "IMPACT" to serve as a communique for IEEE's PACE volunteers. It was intended to address the concerns of the engineering members and be dedicated to professional issues. "IMPACT" is now used to promote college recruiting by supporting the Pre-

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college Education Committee and other academic backed programs. However, we lost "IMPACT" and I quote Professor Pete Rodrigue, IMPACT's Editor-in-Chief, from GA. Institute of Technology. He explains how IMPACT, a publication developed to address our needs, has been lost to others. Pete wrote,

"While IMPACT is the PACE newsletter, it is not PACE's exclusive property. PACE leaders make up only about 20 percent of the circulation. IMPACT has a total circulation of approximately 3500, a little more than one percent of IEEE's members. Of that number, only about 300, less than 10 percent, currently serve as PACE volunteer leaders. Another 400 or so are former PACE workers or others who request IMPACT.

The largest identifiable group, about 25 percent of the whole (or 900) are in education--student branch chairmen, counselors, EE deans and department heads. The second largest group is composed of Technical Activities Board--including Society and Chapter--leaders. They constitute about 750 names (or 22 percent of the circulation)."

"That's the audience IMPACT attempts to address."

This is Pete's rational and weak justification, not mine. I don't buy it or believe it, but the loss of the publication is very real. I believe we lost IEEE's responsiveness to the engineering profession in the same manner. Engineers do not have a means of communication within their society. Naturally, engineers can not reach engineers in other societies or anyone outside the engineering societies. Each engineer is conveniently isolated.

For other avenues of communication I refer to IEEE's SPECTRUM and THE INSTITUTE. Some IEEE members seek to keep the "Pipe line" full to the engineering colleges without concern for the space available to these graduates in industry. They lend credence to the "SHORTAGE SHOUTERS" such as the National Science Foundation (NSF) by giving them free space in these publications, promoting Engineer Shortage Propaganda (ESP) and smothering any dissension. Some, further compound the engineering unemployment crisis by diverting funds for engineering development programs and stress funding to support the NSF and increase engineering degree production.⁵ This activity increases the manpower unbalance and deprives more engineers of an opportunity to practice.

A further detrimental influence to U.S. engineering capabilities and derived from an engineering manpower surplus is under-utilization. Under-utilization of engineers deprives engineers of the opportunity to enhance their skills, knowledge, efficiency and ability. When an engineer performs engineering work only 20% of the time they will, in a 10 year period, gain only 2 years of engineering experience.

Let's consider IEEE's past election. Of the 14 major offices, all positions on IEEE's Board of Directors, 8 positions or 60 percent were won by academics. Who or what professional society will take on the future "SHORTAGE SHOUTERS" and strive for the ENGINEERING MANPOWER BALANCE required for a productive lifetime profession? Any academic who moves in this direction will soon fall from grace with the college empire.

Conclusions

Addressing the questions posed earlier in this paper: We can not reach our government representatives because some one else is reaching them for us. Others, implying they represent the professional concerns of the engineering community, present their

views or agenda in place of ours. Engineers can't reach their representatives because we have always let some one else do this for us.

Conditions are worse today for the engineering professional than ever before. Engineering unemployment is at its highest and recent graduates are not getting the engineering jobs for which they studied so hard. Immigration laws, changed by NSF's propaganda, place U.S. engineers at a disadvantage by giving preferential treatment to immigrants with engineering skills. This further compounds the engineering un-employment crisis.

How and where did we fail? WE failed because we never had the opportunity to express our views. We exhausted our efforts fighting within our engineering society just to get our concerns on the agenda. We failed because we didn't know where to direct our efforts. While we were pre-occupied with internal arguments for problem recognition and methods of communication our opponents, in IEEE, were supporting NSF and their fabrications to get funds for the colleges and degree production instead of engineering jobs.

IF YOU ALWAYS DO WHAT YOU ALWAYS DID
YOU WILL ALWAYS GET WHAT YOU ALWAYS GOT

It is time for change. Engineering careers and a professional society are synonymous. We can't have one without the other. Engineers require an association similar to the American Medical Association (AMA), dedicated to the enhancement of the engineering profession and U.S. engineering capabilities.

Engineers require a publication that will address their professional concerns; a publication with a mission that cannot be altered.

Your association should be strong enough to face the challenges and take on the "Shortage Shouters" and the self gratifying bureaucracies such as NSF. We can not afford to expend our efforts fighting for a voice within our present typical engineering societies. The place to present our case is in Washington, in the House and Senate, and there we will confront our opposition.

And finally, we shall continue by representing ourselves. We have the ability to challenge conventional wisdom and shape the future. The battle for our profession continues, but this time we are in it.

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Editor's Column

KEEPING UP TO DATE

A journalist should keep up to date. Case in point—my article, "A Plan to Utilize Displaced Engineers," in the June issue of AE. It discussed a 1991 plan by the American Association of Engineering Societies (AAES) to place 100,000 technologically literate volunteers in U.S. secondary schools to advise them how to improve math and science education. (Whether the schools are interested in receiving such advice is another issue.) My article suggested that displaced (unemployed) engineers should perform the advisory service. I still think it's a good idea to use unemployed engineers. However a new organization is running the effort to recruit 100K volunteers.

Bob Bellinger's article in the May 11, 1992 issue of *EE Times*, "EFE driving hard for more recruits," tells how an organization called Engineers For Education (EFE) is now seeking the 100K volunteers. It tells how 44 technical societies agreed to support EFE. Their support is a contribution to EFE of 10¢ for each U.S. full member. For IEEE alone, this amounts to \$18,000. Apparently President Bush applauds the effort, because he's quoted as saying it will help "...achieve our national goal of math and science excellence by the year 2000."

I learned that a Leon DeLorme is Executive Director of EFE, which has its headquarters at 39 Old Ridgebury Rd., Danbury, CT 06817, (800) 489-0348. I called the number, requested more information and later received a packet of information in a glossy cardboard cover. It contained a cover letter and a sign-up form for the National Engineering Registry. The form asked with which program I'd like to be involved: World In Motion, TEAMS, Math Counts, M³AS or SKIL. It also contained explanatory material on each of these enrichment programs. It told how EFE is a non-profit association of over 40 engineering societies, to improve math and science education in primary and secondary schools in the U.S., and it solicited contributions.

It strikes me that the nationwide emphasis on improving math and science capabilities in the U.S. is a case of misplaced attention. With over 40,000 engineers and a corresponding number of scientists and mathematicians out of work, why do we need to improve our math and science capabilities? To turn out more engineers, scientists and mathematicians who will be out of work? I don't see anything wrong with the talent of our existing scientific and engineering work force. Their mistake was to fall victim to a recession, caused by giving away America's manufacturing base and the technological jobs connected with it. I suspect that the high-school-math-and-science improvement organizations are a front for the education industry, to induce more high school graduates to enter engineering college. I note that Yale has considered discontinuing its engineering college, for lack of enrollment, and other engineering colleges are hurting also.

The economic decline of the U.S. is not the fault of scientists or engineers, either employed or unemployed. AEA President Billy Reed says it's the fault of economic decisions to make the U.S. produce services instead of goods. I agree. Engineers don't make these decisions; politicians do, aided by me-too economics. I'd call this a positive feedback loop, which any electrical engineer knows is unstable. Of course there are some persons in the administration who were originally scientists, engineers or academics and who now perform functions that undercut America's engineers. D. Allan Bromley is the perfect example. Recall he's the government official who defended the NSF prediction of the 700,000 engineer shortage by the year 2010. By the way, Bob Bellinger received a 1991 IEEE Citation of Honor for meritorious reporting of engineering professional issues. He deserved it, and IEEE was right in giving it to him.

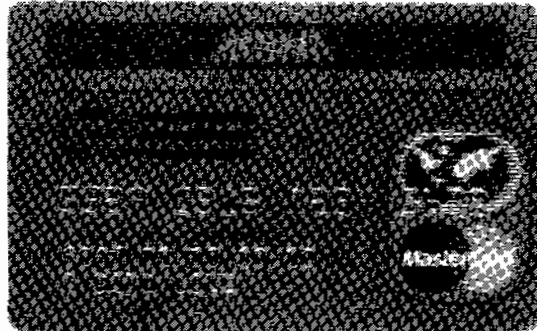
RETRAINING FOR COMPETITIVENESS

A registered patent agent named Robroy R. Fawcett is attempting to start a program (see title above) that taps the federal government's funding for the "Defense Conversion Adjustment Program,"

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(Editor's Column continued)

authorized by 1991 Public Laws 101-510 and 101-511. I read a House memo that said Congress appropriated \$200M funding to ease the conversion from defense to commercial manufacturing. But there's a problem, because of a long delay in releasing the funds to the Labor Department and the Economic Development Administration (EDA). Some May 1991 House testimony by a DOD witness indicates that the funds would be distributed. Mr. Fawcett is trying to accomplish two goals: tap into funds, wherever they are, and start a retraining enterprise with the funds. The retraining program would benefit engineers who believe their careers would be helped by new skills. It would also benefit Mr. Fawcett (formerly in the defense industry) who might deserve the benefit, since he's undertaking the enterprise. Readers who have more information about the Defense Conversion Adjustment Program and the funding for it should contact me at my P.O. Box or Mr. Fawcett at 240 N. 1000 W., Provo, UT 84601.

PENSION PORTABILITY LEGISLATION

Past issues of "American Engineer" have mentioned a bill identified as HR2350, the **Pension Coverage and Portability Improvement Act**. This bill, if passed, would improve portability of pension benefits to workers who change jobs frequently. Under the bill, workers who are covered by defined benefit plans would be able to roll over earned benefits into IRAs or other retirement investments. The act contains provisions which require employers who don't have pension plans to set up voluntary salary-reduction savings arrangements (defined contribution plans) that are tax deferred. I ask you to write your Congressional Representative, urging him/her either to become a sponsor of the bill or at least to back the bill. Then write your Senators urging them to introduce the provisions of HR2350 into Senate bills and to push for hearings on pension portability. Write your Congressman at U.S. House of Representatives, Washington, DC 20515. Write your Senators at U.S. Senate, Washington, DC 20510. If you need help in identifying your Members of Congress, consult the reference pages of your phone book or your local public library.

Robert Bruce

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

The Problem With Industry Is Where It Puts Its Money

A writer at the *Washington Post* recently coined the term "The Cranky Nineties" to describe the times we live in, where grumping and grouching are now considered trendy. My contribution to the stockpile of complaints concerns the value system found in American manufacturing.

The continued public hand-wringing about the deplorable state of

U.S. production is certainly worth grumping about. The situation reminds me of a conversation I once had with the sales vice president of a fast-growing computer company. He turned out to have a career path that sums up a lot of what is still wrong with the nation's penchant for applying band-aid solutions to technical woes. As it happened, this fellow had started out as an engineer with a well-known electronic instrument manufacturing company. He had climbed the ladder there, finally becoming the vice president of manufacturing. In that job he earned about \$30,000 a year, a respectable salary for a middle manager at the time.

He eventually became disenchanted with his job, with the crux of his problem being money. He wanted to make more of it. In exasperation, he finally asked his employer for a sales territory, and eventually he was given one.

The rest, as they say, is history. "That next year," he told me, "I paid more in taxes than I had earned the year before. I also was home for a total of only 14 days."

Having a background in both engineering and sales had also given him a healthy skepticism about the inherent worth of sales executives. "There's no big magic to selling," he confided. "The stuff about sales mystique and inherent worth of sales ability is baloney. Ninety percent of sales is just being organized and following up."

I agree. I've long felt that the sales mystique syndrome is the root cause of numerous problems with American industry, from the debatable lack of talented youngsters entering the engineering profession to the decay of the industrial base.

Don't get me wrong. Star salespeople should be richly rewarded. But companies that don't value engineering talent the same way may not be viable operations long term.

Manufacturing industries in the U.S. would be in a lot better shape if their managements understood that executives and salespeople aren't the only ones whose efforts merit six and seven-figure bonuses. You have to make the same sort of investment in designers who can deliver cutting-edge products and manufacturing engineers who can set up world class manufacturing lines.

Leland Teschler

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