

AMERICAN ENGINEERTM

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Engineers: Today's Problem Solvers

Engineers today are faced with many difficulties in their careers. If things like salary compression and elimination of domestic jobs by imported labor aren't enough there is now the decreasing defense spending curve to contemplate. Over the years articles and editorials have been written addressing these and other "facts of life" of engineering. Somehow all of these factors seem a little like the weather; everybody talks about it, but nobody does anything about it. Solutions, partial solutions or even good suggestions appear to be in very short supply even with a lot of publicity given to the problems. I believe that the shortage of solutions may be due to not getting completely to the root(s) of the problem(s). I believe careful analysis will show that the primary reason for the woes of the profession is the lack of respect for engineers and engineering shown by almost everyone who is not an actual engineer.

Why are we engineers suffering from terminal "Rodney Dangerfield Syndrome?" I think this condition can be traced to lack of a clear picture of exactly what an engineer really is. The perception of the general public seems to be of the engineer as the calculator and pocket protector carrying nerd who hides away from humanity in a lab and knows math and other "book learning." Even engineers may not be able to succinctly describe themselves. Think about it, everyone knows what you are if you are a gardener, a teacher, a football player, a lawyer or a doctor. If you say "I'm a mechanical engineer" some people might even expect you run on motor oil, but very few will have any image at all of exactly what a mechanical engineer is.

How can we explain to the world at large what engineering is all about? Do we even know what it is we are trying to explain? In the June 1989 issue of Delta Airlines Sky magazine there is an article by Perry W. Buffington titled "No Problem!" which postulates the

existence of a "new" personality type. Most people have heard of type A and type B personalities. The author calls the "new" group type C personalities, persons who thrive on resolving chaos. Well, WAIT JUST A MINUTE, I know lots of these people, they're called engineers.

This crystallization of thinking regarding engineering can be immensely beneficial. The engineer as problem solver is vastly different from the engineer as repository of technical knowledge gained in college which evaporates in ten years or less. What is the true goal of a college education? Isn't it to TEACH THE STUDENT TO LEARN? As we get problem solving practice we get better at being creative not incompetent. If our education is properly instilled we know how to learn about whatever we may require to solve the next tough problem to come down the pike. As a problem solver we have to be both specialist and generalist as required by the problem. This perspective should eliminate the myth of "technical obsolescence" for the engineer and help turn engineering into a true career with long term benefits.

Another feature of the problem solving personality type is that since it is an ingrained quality of the individual even the engineer who has been "out of practice" for a while is not hopelessly lost. Even though technology may have changed somewhat the ability to learn and create some order out of chaos will be available for reactivation. Some of the latest psychological research is indicating that even age is not the mind destroying force that it was once assumed to be.

If we engineers know who we are and what we do we can be more confident of our own abilities and educate the rest of the world about our profession. We are a valuable personality type that should be respected and not a technological "drill bit" which gets dull and useless in ten years or less.

Dean S. Carpenter, AEA Member

New Jersey To License Software Designers?

Software Designers must be licensed in the State of New Jersey. This is the latest according to a bill (Assembly, No. 4414, State of New Jersey) introduced by Assemblywoman Kalik, Assemblymen Casey, Spadaro and Mazur. The bill passed the assembly and will be brought to the N.J. State Senate in September. You'd better speak with your member of the N.J. Senate to oppose this bill. I hope this message is in time. However, what about the other States? A word to the wise should be sufficient. I suggest interested members check with their State Assembly to see if a similar bill is being introduced in their State.

More bureaucracy; they'll create a board, collect biennial fees, make you take a test and you must have graduated from a program in software designing which has been approved for the education and training of software designers by an accrediting agency recognized by the Council on Post-Secondary Accreditation and the U.S. Dept. of Education. The bill defines software designing as including,

but not limited to, "the elements of requirements designing, design specification, implementation testing and validation, operation and maintenance and software management."

A few of my associates and I brought this issue to the attention of the Executive Committee of the North Jersey Section of the IEEE. We have about 6000 members in the Section. A motion was made and passed to express our opposition to this bill. A letter was drafted within a week and sent to Senator Raymond J. Lesniak, Chairman Labor, Industry, and Professions Committee of the N.J. Senate. The letter cited reasons for opposing the bill and requested an opportunity to have a representative present at the Senate Committee to speak against it. I'm sure you can obtain a copy of the letter by sending a SASE, requesting a copy, to George Graul, Chairman, North Jersey IEEE, 9C Alabama Ct., Matawan, NJ 07747.

Keep your AEA up-to-date on this issue and we will keep the membership informed.

Richard Tax

Age Discrimination And The Engineering Profession

(Please pardon our error in the August Issue. We should have let you know "Age Discrimination And The Engineering Profession" by Gerald Aksherian is a four part article. Sorry if we left you hanging.

Part 1 "Upper Management And Their Puppets" was printed in our last issue. Part 2 appears below. Parts three and four will be forthcoming.)

Part 2: A Profession of Inexhaustible Knowledge

The frivolous perception and 'findings' by self-appointed 'experts' and others in the high ranks of the industry about the engineering profession—are odious to common sense.

(As we recall, they say engineers over forty—not to say in their fifties, sixties, or seventies—lack 'vitality', or that they are apt to lose their 'resourcefulness', or that the life span in the profession is '15 years', or just '5 years' etc.).

The engineering profession, being a diligent application of scientific achievements—is scarcely a function of physical factors peculiar to the human body. Reliance of engineering and scientific professionals on harsh 'body physics' is minimal and negligible. The extraordinary example of Stephen Hawking is a vivid demonstration of that.¹

As a prominently complex profession in depth and scope, engineering requires an overwhelmingly vast amassment of knowledge as to the theory and practice. Just to 'skim' the theoretical part of one profession alone would require decades of learning. The profession is so complex and monumental that no educational institution on earth ever dared to cover it within an academic framework. Therefore, the curriculums of engineering education everywhere lasting 4 to 6 years depending on circumstances, are not and could not be designed to make one an 'engineer' even in the sphere of 'theory'. Engineering curriculums are designed to equip the student with a minimal amount of theoretical knowledge of a kind that would enable the young graduate to expand and excavate on their own, to understand and use the massive technical materials available in the course of their practice following graduation. Engineering is a profession of lifetime learning, with areas to explore bearing no boundaries. As such, for one to become somehow insightful just in some areas of one profession alone—15 to 20 years of stiff and persuasive efforts on their own would be needed after college. Hence, an engineer² might reach the level of appreciable efficiency only between the age of 40 to 50, depending on the persistency of his/her efforts.

After the engineer steps into the area of proficiency at the age between 40 to 50, a pivotal and glamorous period of an accelerated and forceful intellectual power and wisdom begins to pervade into their practice.

This is not peculiar just to the engineering profession.

Every professional, relying on intellectual culture, even to a substantially lesser degree than that of engineering, have a similar curve of growth and progress of professional competence and wisdom. We see testimony of that all around us. The judicious among politicians and lawyers, judges and physicians, economists, and upper-rank 'executives', composers and writers, scientists, etc., overwhelmingly are over forty, in their fifties, sixties, seventies. Forceful politicians and judges above seventies and even in their eighties—are not something considered unusual. The youngest member in US Supreme Court is 51 years old. Look at the members of our US Congress.

It is natural therefore, that engineering professionals and especially those in their forties, fifties and the above, enjoy notable status, respect and recognition in every part of the world. The US with Canada are the two unfortunate outcasts.

Hence, an engineering professional reaches to their platform of proficiency where from he/she launches their startup to the real world of engineering wisdom and progress—at the age 'over forty' or in their fifties, the very period when they are persecuted mercilessly by a corrupt and autocratic establishment and discarded ridiculously as "inefficient" and subjected to blatant age discriminatory policies across the nation.

The inexhaustible depth and scope of the engineering profession requiring lifelong learning efforts independent of changes in technology—makes foolishly ignorant the assertion by some other 'experts' that—an engineer's knowledge becomes 'obsolete' within five or ten years after graduation, because of 'fast pace of changes in technology.'

Engineering curriculums are grouped into two major areas of studies: *Basic Courses* and *Applied Courses*, and the teaching of 'technology' occupies the least of all subjects among the courses studied in engineering education.

The teachings of 'technology' falls under the second group, ('Applied'). It is the study of methods—technical, manufacturing or industrial, methods of making and doing things for practical purposes. It is relatively simple, comprised of much less complicated courses than that of first group. There are educational institutions exclusively for teaching 'technology'. The courses are for 1-2 years duration in US. The graduates are given a degree in 'Technology' (not in engineering). There are also such courses in other countries in otherwise called 'trade schools'. High school graduation—is not always a requirement for enrollment. In such schools the graduates are given a degree in a particular type of machinery, or in a narrow field of applied technology that they call in the US 'refrigeration engineer'; 'locomotive engineer'; 'compressor engineer'; 'boiler engineer'; and countless other 'engineers' that US industry invented.³

The first group of courses, the Basics, are the theoretical courses in the subject area of engineering with utmost and unsurmountable complexity. They are: Basic science (higher mathematics, physics, chemistry.) Basic engineering (electrical, mechanical, thermodynamics, civil, electronics, etc.). The basics of a chosen field of the profession (either electrical engineering, or mechanical, civil, or electronics, chemical, or others.) Supplementary courses (drawing, design, safety engineering, economics, etc.).

The perplexity of each of these courses of study classifies the material into numerous areas, branches and sub-branches. For instance, the profession of electrical engineering alone has about 20 or more branches in 5 or 6 highly sophisticated areas that the engineer shall continue to explore for life in the course of their practice following graduation.

The purpose of educational institutions in engineering is to concentrate on these very Basics and not on so called 'technology', because the Basic knowledge acquired thus, first: Is applicable for decades to come for life in any part of the world applicable to any technology—new and old, known or unknown, whether having 'fast pace of change' or 'slow pace of change' or having no change at all. Second: It arms the graduate with the potential and ability to spot and solve problems.

This is what we call—the Engineering Profession.

Hence: The engineers over forty, (not to say in their fifties, sixties, or seventies) are irreplaceable because of their proficiency, resourcefulness, wisdom, knowledge, expertise, problem solving capabilities to such an extent that the economic benefits of their few weeks, few days, or few hours work, or even their just one remark or observation—may cover their entire annual salary multiple times, or may prevent a disaster, and hence no number of 'young' engineers can replace them no matter how 'bright' they might be, and no matter from where they may be imported. And as such, these mature engineers are also indispensable in training, guiding and inspiring our younger generation of engineering professions.

By Gerald Aksherian

¹ Stephen Hawking, a celebrated astrophysicist, is continually engaged in most resourceful scientific activities with remarkable accomplishments despite his total physical impairment. (He can not walk, can not talk, can not write since 1960.)

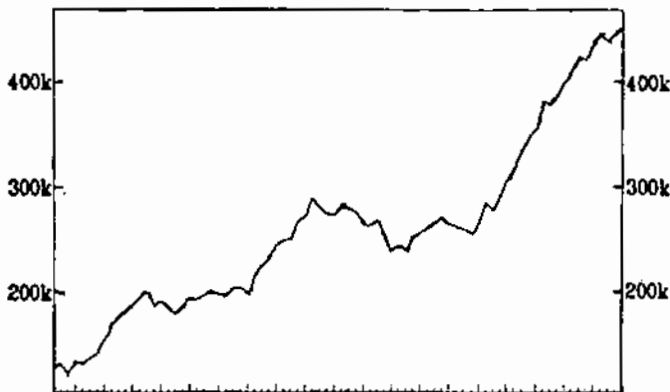
² Obviously we are not referring to 'locomotive engineer', 'office engineer', 'scheduling engineer', 'grounding engineer', 'building engineer', 'airport design/engineer', and countless others that US industry invented.

³ A latest one improvised by the industry is 'concurrent engineer'.

Exports Now Employ Twice As Many Engineers As Defense

Rapidly expanding real export volume now more than compensates for declining defense employment. Recent declines in defense employment of 4% and 5% respectively in 1989 and 1990 have resulted in an estimated engineering employment of 222,000 in the first quarter of 1991 from a level of 244,000 in 1989. Export-related engineering employment has been growing at a long-term compounded rate of 6.2% per year, moderated by currency exchange rates in the short run. Exports presently account for employment of 456,000 engineers, or twice the number employed as a result of current defense expenditures. Electrical and Electronics Engineering employment supported by defense expenditures was approximately 86,000 in 1989. Subsequent reductions in defense expenditures have contracted that employment by 8,000 to 78,000, while expansion of exports held Electrical and Electronic Engineering employment to 175,000 in the first quarter of 1991, twice the defense employment.

IN THE FIRST QUARTER OF 1991, 24.5% OF ENGINEERS ARE SUPPORTED BY EXPORT SALES AND 30.6% OF EE'S ARE DEPENDENT ON EXPORTS. In the first quarter of 1991, the real dollar value of exports needed to support one engineer was \$1.415 million. This is in between the values of GNP per engineer of \$2.33 million from the general economy and defense expenditures per engineer of \$1.19 million, and establishes the reasonableness from a subjective point of view. The industries involved in these exports (among others) are: aircraft, semiconductors and semiconductor-manufacturing machinery, oil-drilling and oil-exploration equipment. These are all high-tech industries.



1971/2 EXPORT SUPPORTED EMPLOYMENT ————— 1991/1
FIGURE 1. ENGINEERING EMPLOYMENT SUPPORTED BY EXPORTS

The figure shows the variation in engineering employment as a result of the expansion trend of 1.508% per quarter, modulated by the exchange-rate controlled variation. The stagnation periods are associated with the rising and then high value of the dollar, while the rapid expansion is associated with the falling and low value of the dollar. The values were derived from the 1991 measured value of \$1.415 million of exports per engineer. That same factor was used to determine all previous levels of engineering employment, based upon the then current real dollar export volume. Other work indicates that the real GNP per engineer increases at the rate of 1% per year. On the basis of other data, it is expected that in early years, employment (on the graph) may be understated by as much as 20%. The current levels are as represented. Electrical and Electronics Engineers will have roughly the same kind of variation, but with a present quarter peak of 175,000 supported by exports.

Robert A. Rivers

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A 10-Second Commercial

The next time an associate of yours complains about the profession, hand him/her your copy of the AMERICAN ENGINEER. Say "Please read this publication and copy whatever you wish to use. Pass this on to your next associate who complains about the profession."

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Is There A Shortage Of Civil Engineers?

A colleague from California mails me interesting news clippings and articles from time to time. He recently mailed me two articles from the *Journal of Professional Issues In Engineering Education*, January 1991. The first article, entitled "The Challenge: Recruiting Students to Civil Engineering," is by Jeffrey S. Russell, Assistant Professor of Civil and Environmental Engineering, University of Wisconsin, who is also an Associate Member of ASCE. In this article, Prof. Russell states:

"Although careers in engineering promise an excellent future, predictions of impending engineering shortages continue. The demand for science and engineering personnel is expected to increase by 36% over the next 10-15 years...By the year 2000, total employment of civil engineers is projected to increase by 25%, an average rate of increase of 1.6% per year...However, the National Science Foundation (NSF) estimates that the number of science and engineering baccalaureates in 1996 will fall short of this demand by 45,000. By the year 2010, this shortfall will grow to 70,000."

The second article from the same Journal, entitled "Professionalism and Marketing of Civil Engineering Profession," is by John A. Alexander, Professor and Chair, Department of Civil Engineering, University of Maine, who is also a Member of ASCE. In this article, Prof. Alexander states:

"It is meaningless and misleading to speak of a shortage of civil engineers in a free market unless increasing salary levels validate the claimed shortage. An increase in demand is not created by an employer saying he/she is unable to hire the engineers he/she "needs" at his/her organization's existing salary scale. Demand is only created if the collective market is willing to put its money where its mouth is. Anything short of this is only complaining that a commodity isn't as cheap as we would like it to be."

Regarding the predictions of an imminent shortage of engineers and scientists, NSF has admitted in print that it has not been able to estimate demand for these professionals. Its prediction of shortages are simply a statement that numbers of college graduates in these fields have shrunk in recent years, which causes a "shortfall," not a "shortage." Several articles in *AE* as well as some in *IEEE* periodicals have (in my mind) completely debunked the myth of the shortage of engineers. I refer you to Frank Lord's articles in March and April 1991 *AE*. Robert Rivers' article in May 1991 *AE* cites the figure of 43,000 unemployed engineers in the last quarter of 1990, which is simply not consistent with a shortage. My feeling is that there is not now, nor has there ever been a shortage of engineers. *AEA* has testified about this in Congress.

Robert Bruce, *AE* Editor

Facts About This Publication

Readers should be aware that it takes about 6 weeks to produce an issue of "American Engineer," from the time all articles for the given issue are in my hands, till the time the publisher mails out the issues to the readership. Readers who wish a contributed article to be in a given issue of *AE* should submit it to me during the first few days of the month before the date of the issue. For example, an article for November 1991 *AE* should be in my hands on or before October 4th.

Another fact about this newsletter should be obvious. This publication, like all others produced with volunteer editing, operates on the "NINO" principal (nothing in/nothing out). While I often have an editor's column, I could never write this publication in its entirety and also be the editor. Literary contributions come from the readership and the Publications Committee of *AEA*. When such contributions do not appear in sufficient quantity, we will have a short bulletin. This is not as pleasant as having an exciting, 8-page publication each and every month. End of story.

Robert Bruce, *AE* Editor

Reader's Voice

We set aside this column in each issue of the "American Engineer" to allow readers to voice an opinion on any professional issue they choose. Letters should be a maximum of 500 words, relevant to a current issue that affects the professional life of an engineer. Articles submitted may be longer. They 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 in each published item (unless the writer requests anonymity). We reserve the right to edit each submission, as long as we don't change the gist of it, and to publish or not publish it. We assume that authors who send us material have accepted these conditions, unless they instruct us otherwise in writing.

Editor: In the Editor's Column of the July '91 issue of AE, I stated that U.S. colleges graduated about 66,000 engineers in 1990, and there are about 1.8 million engineers in the U.S. I concluded that this entry rate would displace the entire population of U.S. engineers in 27 years. Below is one reader's correction of these figures, for which I thank him.

From Lawrence Fafarman of L.A.: - "According to Louis Guy of NSPE, more than one-third of workers classified as engineers in the federal government statistics do not have engineering degrees; based on my own knowledge and experience, I can believe this figure. Hence, if the total number of workers classified as engineers is 1.8 million and there are 66,000 engineering grads per year, then the entire 1.8 million workforce would be replaced in 18.2 years! Alternatively, if 33,000 new workers without engineering degrees (grads in physical science, computer science, math, and engineering technology plus qualified non-degreed people) could be added to the 66,000, then the entire 1.8 million engineers could be replaced in the same 18.2 years. Also I have enclosed historical profiles of the annual production of engineering degrees to support my assertion that relatively few graduate engineers will reach retirement age in the next few years."

Editor: In the Reader's Voice column of the July issue of AE, I published part of a letter from Joan Campbell about the adversities facing contract engineers. Part of Ms. Campbell's response follows: I was unable to include all of it. I'm forwarding her letter to AID'Nak, our contract engineering specialist on the AEA Publications Committee. Do any shoppers wish to respond to Ms. Campbell's assertions? Do any foreign (third world) engineers wish to respond? You can write me at the address below.

From Joan Campbell of Tulsa: - "I promised Billy Reed I'd become a member when I went back to work. I made a payday, so a check has been sent. Yes, I'd be more than happy to participate in an AEA committee on shoppers. As you know, I occasionally do a letter in *CE Weekly*. A while back, I offered to collect, correlate and publish data submitted by shoppers. Nothing happened. The next time I feel literary, I will include a comment concerning these results and suggest that the complainers (shoppers who gripe and do nothing) put money where the mouth is, by supporting AEA.

"My opinion is that many of the shopper's problems are of their own making. At one time a shopper was a highly competent professional, conducted himself accordingly, did a top-notch job and was accorded the pay and respect earned. Unfortunately the quality of the ranks has deteriorated in the past few years and the good ones have suffered. Of course the bean counting mentality inherent in the once popular MBA route to management also helped. Too many people who choose contracting want the independence of self-

employment but also want the advantages of being an employee. They want someone to take care of them. A true professional will take care of his own business by arranging his insurance and pensions. To allow someone else to do it for you will surrender independence.

"I support restricting the importation of foreign (third world) engineers... They will accept positions below the commensurate (salary) scale. I'm (also) against buying any service or product abroad if it can in any way possible be obtained in this country. I advocate an import duty on any product of foreign manufacture sufficient to remove the lower price competition prevalent. This should also include goods made from U.S. manufactured materials but assembled in another country..."

From W.H. Proud, L.A.: - "Like one of your correspondents in your May issue, I am a retiree but am enclosing a dues check, at least for this year. I feel that I owe it to those who helped establish the engineering profession, which has treated me very well for the last 40 years. I'm going to add a few comments that you may use in any way you wish, comments which some members might not like to hear.

"In answer to the survey question (see the sample reader survey in May '91 issue Reader's Voice) 'Is your company laying off some technical professionals while hiring others?' I would say that they SHOULD be if the company is any good. Upgrading the competence of the organization should be a constant process. Note, I did not say equal work for lower pay. In 1989-90, company XXX gave retirement incentives to over 6,000, including most of their top Senior Technical Staff. XXX shot themselves in the foot!

"Although there were undoubtedly many the company could afford to be rid of and there were those who retired for real or changed careers, there were many who left XXX Friday night and started working at other firms on Monday morning. Those firms were snapping up these "best and brightest," even those over 70 years old, because they knew their track records. At the same time those firms were laying off people, and they didn't, in some cases, have jobs in hand for them, but wanted them around for that program due in soon. The moral of this is that really good engineers will never have a problem finding a job, even in the worst of times. The corollary is that it is a shame, largely of the academics, that there are a lot of people of questionable competence, being called engineers. In times of high engineering employment they frequently find slots doing the sub-professional work noted in survey question 10, the paper-pushing assignments which would bore most people to tears. Often these people are just putting in their time until retirement. Before they complain about having a job which may be beneath them, they should consider whether they wish to compete for the jobs requiring more competence."

Editor: I had to leave out two thirds of this long letter, but may publish more of it in future issues. I don't agree with Mr. Proud's comments, but include them to publish many sides of the issue of engineering careers. As I stated in the July issue of AE, I know talented PhD's who were laid off during a recession and could never re-enter the profession, because they were viewed as 'overqualified.' Robert Rivers has also commented on the process of weeding out engineers from the work force, to replace them by lower-paid, younger engineers. There are undoubtedly some marginally-competent engineers practicing today. However that does not account for the shortening of an engineering career from the 40+ years it ought to be, to the 15 to 25 years that actual experience tells us it often is.

From B.F., in MO: - "With the current decline in the defense budget, your organization is needed more than ever. I had been unemployed the past year but have recently got a job shop assignment out-of-town and will be hitting the road soon. I have been in contact with fellow out-of-work Stress engineers and things look pretty bleak. One friend in particular has been out-of-work for over two years, in spite of thirty years experience as an aircraft stress analyst. Yet incredibly we read of the so-called critical shortage of engineers from the National Science Foundation....Keep up the good work and I will continue to promote your organization wherever I am."

From E.B., in SC: - "Please advise if there is anything that I can do to help."

From L.E., in NJ: - "I will send what I can on a monthly basis." (Ed. note - Mr. E. included his check for \$20.00 with the comments. We will upgrade his membership as applicable.)

From S.G., in AL: - "I would love to write about some of my experiences." (We would love to have you do so. Send your copy to Editor Bob Bruce at address below.)

From E.M., in TX: - "Work to protect the interest of the working engineer, please...."

From R.S., in WV: - "The article in the August 1991 *PJS (Professional Job Shopper)* by Al D'Nak finally woke me up as to the necessity and responsibility of membership to AEA as THE association that we professional contract and/or direct engineering personnel need to mutually serve our interests as professional workers."

From T.D., in VA: - "A very good publication which I will be showing to my fellow workers. I hope that they will show an interest because it is so important. The Company I work for has their own cost cutting scheme.

"They lay off people and if they are still unemployed after 30 days, they will call some of them and offer them temporary work for 90 days. When the ninety days are up they may offer them another extension hoping they will quit so that they will not be eligible for the hospitalization extension after layoff of eighteen months."

Robert Bruce, AE Editor

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

Nice People

AEA recently acquired an older version of a Bernoulli Box, a mass storage device, for our computer system. In order to make it operate with our system, we needed a controller card, software, cartridges and interface cable.

We contacted Iomega Corporation, maker of the Bernoulli Box, concerning our needs to put the box in working order etc. They were more than helpful and in fact donated all of the materials we needed to complete our installation. Within about three days we received our materials.

I want to publicly thank the Iomega Corporation, Mr. Paul Slack, Vice President; his secretary, Ms. Janet Neilson; and the lady who directed me to Mr. Slack on our original phone call. Each displayed the ultimate in patience, courtesy and willingness to help. All were gracious and helpful far above and beyond what one would normally expect. Each displayed the kind of professionalism we wish we could all deal with every day.

At a time when most of us have to fight for service on products we purchase, even when the warranty is still in effect, Iomega Corporation's willingness to help when we did not purchase the Box from them is very refreshing.

If any of you are in charge of recommending equipment for your particular company, I would urge you to consider the Iomega Corporation and the Bernoulli equipment. You'll never be treated better.

THANK YOU IOMEGA CORPORATION!

Two Masters

We received the following information from an unidentified source. No doubt an employee of Borland International Inc. I thought it was worthy of comment in the "American Engineer."

The following appears to be a clip from a newspaper or magazine article. "Borland people used to work 12 hours a day, six days a week....Now it's going to 15 hours a day and seven days a week," said Philippe Kahn, president of Borland International in Scotts Valley, after announcing the purchase of Ashton-Tate Corp.

The individual who sent the quote made the following comments: "If only the Department of Labor was not in industry's pocket it would have laws to prevent the exploitation of these and other, exempt workers. All non-management employees should be paid for any overtime worked. This is only fair."

In fairness, the Department of Labor has many fine people trying to do the right thing. Unfortunately most seem to be at the lower levels and are often stifled by their higher level bureaucrats.

Lincoln once said "Labor is superior to capital." This comment gave rise to the labor union movement and the Department of Labor was founded out of that movement. Only much later was the Department given the charter to "help" industry. I was taught as a youngster that "You cannot serve two masters." Perhaps that is the lesson to be learned here.

Billy Reed

EET-NET

Are you curious about AEA? Do you have information which you think AEA should have? Do you want information from or about AEA?

Electronic Engineering Times has established an online network for engineers through CompuServe. The cost of the network is a very reasonable \$7.95 per month plus \$.30 per hour of connect time. (Plus phone charges if not local to you.)

AEA president Bill Reed is on the network with the ID number 70202.371. Should you wish to contact AEA for information or leave information for AEA or just to say hello, we would like to hear from you.

If you are not on the network, *EE Times* gives this set of instructions for signing up:

1. Set your telecom software for a baud rate of 300, 1200 or 2400 bps, 7 data bits, even parity/1 stop bit, full duplex.
 2. Dial 800-346-3247. When the modem connects press (ENTER). At the HOST NAME prompt PHONES. Follow the menus to find the local number nearest you. Hang up and dial, using the number you just found.
 3. When you receive a CONNECT or CARRIER DETECTED message, press (CTRL C). If the HOST NAME prompt appears enter CIS.
 4. At the USER ID prompt, enter 177000.6400.
 5. At the PASSWORD prompt, enter EET*NET.
 6. At the ENTER AGREEMENT NUMBER prompt, enter EET0090.
 7. Follow the directions that appear on the screen.
- If you already have a CompuServe ID, just type "GOEETnet" at any prompt. For Assistance, call 800-848-8990.

It should be noted the EETNET message center is very public. Anyone on the network may read any message left there. I understand the CompuServe E-Mail system is private and is accessible from EETNET but there are additional costs.

We look forward to hearing from you.

AEA And Technical Societies

We are often asked what our relationship is with the various old line technical societies. AEA does not receive any financial support from anyone except you the member. We are not part of any other engineering organization. To do so would compromise the one organization working only for the engineer.

When there are issues where the old line societies share AEA's views, we cooperate. Where they do not share our views, there is no cooperation. AEA will not change our views or our goals. We will work with anyone (including labor unions) on certain issues. We will surrender our independence to no one.

Another often asked question is "What can I do to help?" If you are a member of a technical society, remain a member and become active in their groups or committees which are supposed to promote professional activities. Work to promote those activities which are beneficial to the working level engineer. Oppose those activities which are detrimental to the engineer.

Work from within those organizations to promote AEA's views and goals within that society. Let them know AEA is working for, not against the engineer, and as a dues paying member of that society, you expect them to do the same. Let us know when they are doing a good job and when they are not.

Virtually all of the technical societies are having membership problems because of their lack of attention to the professional issues. NSPE and their efforts to establish another organization to deal with the professional issues is perhaps the best example. (See the April issue of the "American Engineer.") By leveraging your membership in AEA through the technical societies we can force meaningful changes in those organizations. Without AEA, we never will be able to.

They will have to listen or lose the people who are footing the bill, you and I.

Billy Reed

Houston Area Meeting

The American Engineering Association will be holding a Houston area meeting to discuss "Employment in the Nineties" starting at 6:00 PM, on October 2, 1991. The meeting will be held at the Providence Room at the Houston Engineering and Scientific Society (HESS), 3121 Buffalo Speedway, Houston. A \$2.00 per person room contribution is required.

Mr. Jeff Town will be acting as our Houston area coordinator for this meeting. To reserve your spot at the meeting, please contact Jeff at (713) 453-3240 as soon as possible. You may write to Jeff at the following address: Mr. Jeff Town, 13303 Myrna Lane, Houston, TX 77015.

I am sure Jeff could use some help in making arrangements etc. You might let him know if you are willing to donate a little time and effort to make this meeting a success. Give Jeff a call or drop him a note in support of an area meeting. Spread the word at work and urge others to attend.

ATTENDANCE WILL ENHANCE YOUR CAREER!

Notice On Postage Paid Reply Mail Permit

Due to the increased cost of postage, we have discontinued our Business Reply Mail permit which allowed the member to mail his or her application on a self addressed, postage paid basis. Any of you who still have the postage paid envelopes should destroy them.

THE POST OFFICE WILL NOT DELIVER THESE ENVELOPES!
To continue to use these envelopes will only cause all of us problems. We have not printed or distributed these envelopes in over a year. Thanks for your cooperation.

Goal-50,000 Members in 1991

Did you introduce AEA to an associate this month?

AEA Legal Defense Fund

The AEA Legal Defense Fund is to provide finances to litigate selected cases, where engineers have been professionally harmed. This fund will provide for the defense of engineers and related occupations or to file litigation related to foreign imports, whether people, goods or services; discrimination; terms of employment; pensions; patent rights; and tax issues which are detrimental to engineers and related occupations.

Since the above issues are crucial to advancing the professional standing of engineers, we ask you not to forget the Fund. We need your help in the form of contributions in any amount. You could be the next person who needs help. The funds will only be used for cases that the Board of Directors believe will have broad benefit to the engineering community.

To make a contribution, make your check payable to AEA Legal Defense Fund and mail to P.O. Box 820473, Fort Worth, TX 76182-0473.

All contributions over \$10.00 will be acknowledged by return mail. Allow thirty days from mailing, to receive your response.

Sponsor A Member Of Congress

One of our members, J.C. from Texas, has presented us with a terrific idea. He has enclosed a check for twenty dollars to sponsor a gift subscription of the "American Engineer" for Senator Moynihan of New York. He indicated he wanted the "good Senator to know what is going on in the real world."

How about another 540 of you sponsoring a gift subscription for your Senator and/or Representative? We will write a letter to that Member of Congress and tell them who the subscription is from. We will send you a copy of that letter.

If duplication of sponsors occur for any Member of Congress, we will pick one from your State, if available. If not, we will pick one from a State in which we have fewer members. If we cover all Members of Congress, we will mail subscriptions to other critical officials. We will inform you of who you are sponsoring. Oh, yes, you may sponsor more than one Senator or Representative.

Our Senators and Representatives hear from industry and academia daily. Let's let them hear from the working engineer at least monthly.

Billy E. Reed

United We Stand

You may note the AEA is for and about the American Engineer. The more of us that participate the more AEA will reflect the personality and culture of the American Engineer. Therefore, it is important that we encourage all members of the engineering community to join us. One of my primary goals is to enhance the bond between all members of the engineering community. This includes the many engineering disciplines, technical levels and methods of participation.

I have been involved in the engineering field as a direct employee, a contract engineer and consultant. How we market our services should not be a barrier between us. We welcome all members of the Engineering Community whether one is a direct employee, job shopper (contract engineer) or consultant. We're all in the same boat, and the sooner we recognize this, the sooner we will work together to address our problems and build a stronger profession.

Another of my goals is to provide a monthly publication for members of the engineering community. Believe it or not, this is something we have never had before. We have never had a timely method of communication dedicated to the professional needs of the engineering community. Our publication, the "American Engineer" (AE), will unite the engineering community to influence legislation and political issues. AE will keep our membership informed and play a major role in achieving our goals and improving conditions.

AE is presently supported by a staff of concerned seasoned volunteers with years of engineering experience and a history of dedicated service to the members of the engineering community. When we tap the talent of our membership the "American Engineer" will be the finest professional publication in the United States. Also, I have never thought of the "American Engineer" as a newsletter or bulletin. I can only see the "American Engineer" as a great publication that is presently in its infancy. We owe our thanks to Bob Bruce our Editor, Mike Perugini our Publisher, Neal Leonard who prints our labels, and the others that contribute articles for AE's great beginning.

Last April I set a goal of 50,000 members by the end of 1991. Now, our goal may seem impossible. As engineers we say, "The difficult we do right away and the impossible takes just a little bit longer." We have always done more for others than we have for ourselves. It is time to place an additional emphasis and effort in doing something for ourselves. At the same time, I believe, we shall also enhance the engineering capabilities of our great nation.

I still want 50,000 members in 1991 and our members should accept no less from me in setting this goal than I expect from them in reaching this goal. This number is attainable.

VISIBILITY is the issue. Considering our present efforts and capabilities the response to AEA has been outstanding. However, we do not have the funds to mount an expensive advertising campaign and provide the visibility necessary to reach the great numbers of the engineering community to gain their support. We must and can only depend upon our membership, associates and friends to provide the visibility necessary to meet our goal. We can reach our goal of 50,000 only if we try. We have to reach out to all engineering disciplines and technical levels whether they participate as job shoppers, consultants, or work directly for a company. This opens our membership potential to a vast number of professionals that need and seek the unity and benefits AEA can and will provide. We just have to let people know we are here.

Recently Billy E. Reed, President of AEA, accepted and started on a new contract assignment. The good news is that he is making a living. However, the bad news is, he now has less time for us and the AEA. Personally, I would prefer to have Billy Reed working full time for the AEA. Fifty thousand members will provide funds for a full time staff with an office in Washington, D.C., a \$200,000 publication budget, and funding needed to support AEA volunteers and activities across the country. We will have the funds necessary to cover the expense of sending our members to Washington to testify at congressional committees, meet with our representatives, draft legislation and make our presence known. With 50,000 members we can keep effective people such as Billy Reed working for American engineers.

Fifty thousand is our first goal, not our final goal. After this, the second 50,000 members will be much easier to attain.

I'm going to conclude by sharing a little secret with you. The name "American Engineering Association" is very important, very significant and of great value to all of us. Some years ago the cohorts of the American Association of Engineering Societies (AAES), previously known, I believe, as the Engineers Joint Council (EJC) tried to register as the AEA, but they were too late. Billy Reed and those that formed our American Engineering Association got to it first. This is a story that I shall leave for Bill Reed to tell you. Meanwhile, we should be grateful that the AEA is in safe hands and not in the hands of those that would abuse our professionals.

Best wishes.

Richard F. Tax, Vice President

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: _____

MEMBER (\$20.00) PROFESSIONAL MEMBER (\$50.00) SPONSORING MEMBER (\$100.00)

The difference between membership grades is the financial support and dedication to the issues. All members receive a subscription to the AEA publication "American Engineer."

SIGNATURE: _____ DATE: _____

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

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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:

Roger Boisjoly PE, 3047 E. Menlo St., Mesa, AZ 85213
(602) 641-0887
Ethics & Legislation re: Whistle Blowers Act, Improvements

Robert Bruce, P.O. Box 4493, Great Neck, NY 11023
"American Engineer" publication and related issues

John Densler, 42 Maple St., Auburndale, MA 02116
(617) 244-4417
Immigration issues & related Legislation; Importation of foreign students/engineers

Al D'Nak, P.O. Box 465, Plainview, NY 11803
Contract Engineering, Legislation Section 1706, P.L. 101-583, Free O.T.

Richard Plummer, P.O. Box 326, Valley Forge, PA 19481
Discrimination/Issues/Legislation

Bill Reed,
Pres, AEA, P.O. Box 820473, Fort. Worth, TX 76182-0473
(214) 264-6428
Industrial Base, Import/Export Jobs Technology transfer

Robert Rivers, AIRCOM, P.O. Box 129, Union, NH 03887
Manpower Issues & Legislation; Employment - Underutilization; Engineer Shortage Propaganda (ESP)

Richard Tax, V.P. AEA
P.O. Box 2012, River Vale, NJ 07675
(201) 664-0803
Issues, General & further information

R.T. Pinkerton, Staff Cartoonist
P.O. Box 820473, Ft. Worth, TX 76182-0473
Ideas and subjects for new cartoons

Goal — 50,000 Members in 1991

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