

AMERICAN ENGINEERTM

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We Shall Prevail

The week of February 16, 1992 has been dedicated as National Engineer's Week and I would like to take this opportunity to congratulate and honor you, the members of the engineering community. I commend you for your many accomplishments and contributions to our society and our great nation.

To those who have worked in the defense sector, we owe a special gratitude because your contributions have kept our country safe and free from aggression. Our cities and shores have been free from bombings and invasion because of our nation's technological strength and your engineering capabilities.

To those in the commercial sector we thank you for your contributions in too many areas to mention. Your signature touches everything made by mankind, no matter how small and in every industry. I can visualize the engineering effort that not only developed a product, but the equipment used to manufacture and produce it. Your presence is everywhere.

You, the members of the engineering community, have made our lives safer, healthier, easier, more enjoyable, more efficient and more productive to say the very least. You have done this often under adverse conditions, through dedicated service and personal sacrifice, and for this you also have our appreciation and our gratitude.

You are a unique breed; the better you do your work the sooner you will be without a job, without an income and without a career. Knowing this, you always proceed and do your very best anyway. Your function is to design yourself out of a job. You have done this admirably. Engineers have not only won the wars, they have won the peace. The Cold War is over and communism, as a threat, is ended. I believe, very confidently, that our victory in the Persian Gulf was

primarily due to the technology developed by our American engineering community. Now, you are being disregarded and laid-off by the hundreds of thousands. Had you not done your job and our technologies failed in the Persian Gulf; had we, these United States, failed to show that we can back up our will with our engineering developed might and capabilities, you would all still be in great demand. Had you failed, like so many others, Congress would shower the engineering community with money in the naive belief that money alone would breed success. The defense budget would increase and you would not suffer the pains of unemployment and underutilization. However, I would not have it any other way. I am proud to be a member of the engineering community, knowing that we function to solve problems and move on to new challenges. I am proud, and you should also be proud, to be members of a profession that has performed so outstandingly.

We are still very much concerned about the crisis in engineering unemployment and engineering underutilization in the United States today. AEA will continue to tell others that our unemployed and underutilized members of the engineering community must not be forgotten. We must continuously strive for a manpower balance that provides our engineers with the opportunity to pursue their careers and enhance their engineering skills and capabilities throughout a lifetime of continued practice and professional service. We shall prevail in this endeavor.

We thank you for your efforts, dedication and achievements. We applaud you and will remind the rest of the world of your capabilities, willingness, readiness and desire to do even more. God bless you all, not only during National Engineer's Week, but throughout the year.

Richard F. Tax

Immigration Into The U.S.

I thought readers would be interested in the following information concerning numbers of immigrants legally allowed into the U.S. by the Immigration and Naturalization Service (INS). This comes from the Immigration Act of 1990, and the figures are totally aside from the INS quotas based on place of national origin, which in 1985 were 270,000 total for all nations.

Categories of work-related visas and number allowed per year:

- Priority workers, including those with "extraordinary abilities" such as outstanding researchers and professors, and certain executives and managers of multinational companies: 40,000.
- Advanced degree professionals and workers of "exceptional abilities": 40,000.
- Skilled workers, bachelor's degree holders, and other workers: 40,000.
- Immigrants who invest at least \$1 million (\$500,000 in rural and depressed areas) and create at least 10 jobs: 10,000.
- Special immigrants, including U.S. government workers overseas and church workers: 10,000.

Total: 140,000. Source: Immigration and Naturalization Service.

I recently purchased and read "The Immigration Time Bomb," by Palmer Stacey and Wayne Lutton, published by The American Immigration Control Foundation. Admittedly the authors and the

organization for which they write have a point of view, because they refer to burgeoning immigration as 'imported unemployment' and 'imported welfare.' They cite the year 1980, during which over 800,000 legal immigrants and estimated millions of "illegals" entered the country. The reason the 800K figure is so far in excess of the 270K is that immediate families of legal immigrants are legally permitted to enter the U.S. without being counted in the total. Those nations that furnish the largest number of immigrants to the U.S. are often those whose residents have large families.

I tend to share the alarm of Messrs. Stacey and Lutton at the total failure of U.S. immigration laws to regulate entry into this country. I'm aware that there are engineering job ads run by various state employment services, which offer jobs at sub-normal pay to applicants who speak certain Asian languages that are not relevant to the job, or have an extraordinarily diversified background, considering the low pay offered. These ads are thought to be aimed at a specific applicant who already works for the (unidentified) employer and whose temporary visa is soon due to expire. I feel that America's diminished position in the world economy necessitates rethinking of our immigration policies. I think this is particularly true in light of the present recession and the small likelihood it will end soon. What do you think?

Robert Bruce, AE Editor

Peace Casualties

State Looks At Ways To Help Defense Industry Workers

When economists talk about the "peace dividend" wrought by Pentagon spending cuts, chances are they're not thinking of people like Peter Lowry, a senior program analyst at Unisys Corp. who lost his job after 25 years.

Chances are, they're not even thinking of Minnesota, which isn't known for its military installations.

But defense spending is woven tightly into the state's economy, particularly in the Twin Cities. And industries hit hardest during the lingering recession—makers of computers, scientific instruments and some metal and electrical products—rely on defense contracts for much of their business.

"It's the high-tech industries that have been clobbered," said Larry Wipf, who tracks employment as an economist for Norwest Corp. He blames restructuring and problems in the computer industry, not merely the defense cutbacks.

While the nation's economy crawls toward recovery, studies suggest that shaky times aren't over for workers whose paychecks depend on defense contracts. Job losses aren't expected to peak until 1993, according to one private study.

On Wednesday, a Minnesota House committee began looking into the problems of nearly 30,000 Minnesotans believed to be casualties of defense industry contracts. The problems already have cost the state \$2.9 million in services for dislocated workers.

Questions of how far the state should go in helping workers such as Lowry go beyond economics. They are complicated by philosophical and political debates over how much defense budgets should be cut, how quickly, and how the so-called peace dividend should be spent.

Working in Eagan, Lowry once helped design military airborne command control technology. But in April 1990, before any of it was used in bombing raids in the Persian Gulf War, he became a casualty of the thawing Cold War.

Lowry, 50, is trying to start over again as an entrepreneur. Highly educated, trained and experienced, he has found that he doesn't fit readily into anyone's business plan.

"If you're 50 and laid off, they assume you're high-salary and high-insurance and you'll leave in six months for a better job. And they're right," he said.

Others at Unisys fared a little better. Claudette Munson, a 45-year-old mother of four, was laid off at Unisys for nine months before she was called back. She works nights crafting ceramic printed circuit boards used to guide missiles such as the Trident.

"I was much more fortunate than some of the people I worked with," said Munson, who watched about 3,000 of her fellow employees lose their jobs. "A lot of them are still out of work."

Munson, of Willernie, has lobbied to save jobs through a worker-led Alternative Use Planning Committee, which has tried to identify commercial markets for the company's technology.

Many workers once assumed, incorrectly, that they were safe if they went into high-tech fields. Freddie Johnson, a 29-year-old electronic technician, fled the auto industry downturn in his native Marion, Ind., nearly 10 years ago and came to Minnesota to work in Honeywell's military aviation division. This past February, after five years on the job, he was laid off and lost his family's home in Eagan.

"I was the youngest of 13 kids, and saw all of them lose jobs when the automotive industry went into a slump," said Johnson, father of two. "I didn't want to get laid off, so I went for the high-tech side of things, only to have the same thing happen to me."

To be sure, the impact of the cutbacks isn't as severe in Minnesota, where 2 percent of jobs are defense-related, as it is in states such as Virginia, where the figure is 11 percent. A study by the Defense Budget Project, a Washington-based research firm, pegged Minnesota's share of defense spending at 4.6 percent, ranking it 33rd among states.

The study put the number of civilian and military defense-related jobs in Minnesota at 49,764 in 1990. By comparison, there are about 54,000 workers in the state's food processing industry. Under Bush administration defense budget proposals, Minnesota would lose

12,364 of the jobs by 1996, the study said, with almost all in the private sector.

Nationwide, the economic impact of the job losses will be "relatively small" as workers are absorbed into other industries, the study said. Minnesota probably will be left with a smaller but more secure high-tech component of defense, said one author, Conrad Peter Schmidt.

"What the Defense Department is doing is reducing size—people and weapons," he said. "As they reduce quantity, quality becomes more important." And increasingly, quality is spelled H-I-G-H-T-E-C-H, he said.

The defense industry already has taken some heavy hits. A study by economists and planning experts in Minnesota said the state lost \$693 million in defense contracts from 1987 to 1989, a 29 percent decline. Military spending in the state had risen steadily throughout the 1980s to peak in 1987.

The cutback ultimately led to a loss of 29,500 jobs both directly and indirectly related to defense contracts, and trimmed the state's gross output by \$2.08 billion, the authors estimated. It "accounts for much of the recent weakness in the metropolitan economy of the Twin Cities," where most of the layoffs occurred, they said.

According to the study, Minnesota has never made money from war. In 1989, Minnesotans paid \$5.4 billion in taxes devoted to defense, while Minnesota businesses received only \$2.1 billion in military expenditures.

The study, published this year by the Minnesota Task Force on Economic Conversion, was done by Wilbur Maki and Richard Bolan of the University of Minnesota and Hossein Akhavi-Pour of Hamline University in St. Paul.

The Persian Gulf War probably has temporarily slowed the decline since 1989, Bolan said. The authors predicted that the early and mid-1990s "will be painful for workers and companies in military-related industries," but that Minnesota's economy should be booming by 2000. They called for state and federal government help to mitigate the pain of the transition.

Norwest's Wipf said the Twin Cities economy can weather the transition. "We've already made a lot of these adjustments, and it didn't cause a depression in the Twin Cities. We had remarkable growth in the latter part of the 1980s, and I think that's a credit to the diversification that we have," he said.

What sets these cutbacks apart from other waves of job losses is that many are in professional and scientific jobs. One purpose of yesterday's hearing in Eagan by the House Labor-Management Relations Committee was to determine whether state dislocated-worker programs can meet their needs.

There is a danger of a "brain drain" from Minnesota if the economy can't quickly reabsorb them, said Bolan, a professor at the Humphrey Institute of Public Affairs at the University of Minnesota.

"When an engineer or a scientist is laid off....the job search is going to be national," he said.

But many legislators said they are unsure about how much money the state should spend trying to help such workers and how much of the transition should be left to the marketplace. Committee members Steven Sviggum, IR-Kenyon, said, "I always have a preference for the private sector handling these things rather than the government....But I'm pragmatic enough to realize that government programs are necessary sometimes to fill gaps."

Frederick Zimmerman, director of graduate programs in manufacturing systems engineering at the University of St. Thomas, said the impact of defense cuts on the state cannot be measured in job losses alone. "If we look at payroll dollars, we get a much greater impression," he said. "The good jobs are skewed toward defense."

A state task force on economic conversion, headed by Rep. Karen Clark, DFL-Minneapolis, has recommended that the state and defense contractors study prospects for maintaining jobs and income as military spending drops further in the 1990s.

Zimmerman and Clark argue that it makes economic sense to find jobs for dislocated defense workers that make use of their skills.

Kevin Diaz and Sharon Schmickle, Staff Writers

(This article reprinted, with permission, from the October 31, 1991 edition of the "Minneapolis Star Tribune.")

Downsizing: How To Be An Incredible Shrinking Company

As today's economy lingers in the doldrums, many executives are facing the necessity of downsizing their companies. This is often one of the most painful activities that an executive will face during his or her career.

In many cases, one is faced with the possibility of having to tell friends that they are out of a job. This is one reason that downsizing is so frequently botched. Contributors rather than noncontributors often are let go, and the company actually loses its competitive position. This is also why, many times, the first person to go is the head executive, and a "hatchet man" is brought in to do the unpleasant work.

Faced with the necessity of downsizing, how can one approach it without putting the company in a less competitive position or yourself on the street?

Before beginning the downsizing effort, make sure that it is absolutely necessary! Downsizing a company is hard on the head executive and wrenching to the entire organization. Some factors indicating the need to downsize are: reduced revenues; a shortage of products and/or opportunities; a shrinking operating margin; loss of sales to competitors based on cost competition; lower productivity as measured by revenues per employee.

If all or many of these indicators are present, the company should probably be downsized. If this is the case, then how can one go about rationally reducing the number of people within the company?

Across-the-board cutting is a common method of downsizing because it is fast and takes the least amount of management skill. But it often ends up moving the company to a less competitive position.

Usually, across-the-board cuts work something like this: It is decided that in order to cut costs, 5 percent of the people within the company must be let go. Each department develops a list of the people who will be cut and these people are let go.

As a result, the departments that are fueling the company's growth and the departments that are dragging the company down are cut equally. In the end, across-the-board cuts only perpetuate existing problems and may actually accentuate them.

An intelligent alternative involves finding the sources of a company's problems, determining its strengths and identifying the people who are contributing to these strengths. This approach may take more effort than across-the-board cuts, but it will make the cutting less destructive.

To implement this alternative, you must first identify the company's problem and plan accordingly. Is the problem due to the recession? Does the company need better products? Are the products not being marketed or sold effectively? Are production costs too high? Is there inadequate service after the sale?

The next step is to pinpoint which areas of the company are successful. This may sound simple, but often it is very difficult. This may be due to an inability to accurately measure the company's performance, a common problem. Or it may be due to political gamesmanship caused by a refusal to recognize excellent performance.

It is up to the head executive to use the correct tools to determine which pieces of the company are performing well. Once they are identified, these areas should be the last to be cut.

A head executive must also ask: Which individuals within the company are current or potential contributors to the company's success? The people within the company will ultimately decide its fate. If the people are capable and motivated, they will lead the company to success. If they are not, then they will lead to its downfall. The trick in many cases is to identify who falls into what category.

Many companies retain a list of people whom they feel are key contributors. One method of compiling such a list is to survey management and employees on key contributors. Generally, the same names will appear over and over again. Whatever method is used, once the contributing individuals are identified, special efforts should be made to retain them.

If we turn the downsizing scenario around and look at it from an individual employee's perspective, what are the keys to remaining employed in a company facing layoffs?

Each individual within the company must ultimately be held responsible for his or her success or failure. Many people allow themselves to become trapped in a company. They keep getting modest raises, they only do what they are told and they show up for work each morning on time. Along the way they have let their skills slip, they are not producing as much as they used to and they are so at variance with the company's strategy that they just don't care anymore. These people are most vulnerable to being placed on the layoff list.

So, if you are being blamed for the company's downfall and have not provided any recent contributions, then be fearful of losing your position. But if you are in an area that is perceived as leading to the company's future success and you are a key contributor within that area, then, as the song says, "Don't worry, be happy."

Peter Brandt

Peter Brandt of Minnetonka is an independent management consultant. His column appears the third issue of each month in "City Business."

(This article reprinted, with permission, from the October 21, 1991 issue of Minneapolis/St. Paul "City Business.")

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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 L.A.: -- "Unfortunately, the engineering shortage myth is reinforced by the widespread misconception that the U.S. has an inferior education system. I, of course, have long believed that the only problem with American education in regard to engineering is that we have been producing surpluses of engineers.

"I feel that the following guideline should be used in evaluating the quality of education systems: In international comparisons, all levels and kinds of education should be considered—grade school, higher education and company training. In international comparisons of test results, the range of scores among countries should be considered as well as the countries' comparative rankings—that is, having a low ranking might not be so bad if the range of scores is small." *Name withheld by request.*

Editor: 100% of the material we've published, having comments on the supply vs. demand for engineers, concludes that claims of engineering shortages are unfounded. Regarding the quality of U.S. education vs. that of other industrialized nations, most experts state that U.S. student test scores are lower than those of other industrialized nations, though they disagree as to the reasons. What this differential means is subject to interpretation. Now from another California reader, having more comment about U.S. engineering education.

From CA: -- "There are engineering technologies today that were not even imagined 30 years ago. With the 4-year engineering degree still the norm, it is not explained how new graduates have an advantage over experienced engineers. Most of new graduates' time was spent learning the same basics studied decades ago by their older counterparts. These basics have not changed at all over the past several decades. Yet a big deal is made of the 'obsolete engineer.' Other fields like medicine or law keep changing. For example, most environmental laws were enacted less than 20 years ago. Yet when was the last time we heard about an 'obsolete doctor' or an 'obsolete lawyer?' Ironically, many occupations where experience is less valuable than in engineering have less age discrimination than engineering. Alleged obsolescence, like alleged over-qualification, is often just a pretext for age discrimination or salary compression." *Name withheld by request.*

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

Pre-Employment Psychological Testing

Editor: An AEA member from West St. Paul wrote Richard Plummer, member of the AEA Publication Board and our anti-discrimination specialist, about pre-employment psychological testing. The member feels that such testing, as practiced in his home state, is unfair.

From W. St. Paul, MN: -- "Many twin city employers subject applicants for engineering jobs to psychological testing. A written test is given, as is an interview with an industrial psychologist. The results are given to the personnel manager, the potential future supervisor, and a copy of the results are permanently filed." *Name withheld by request.*

He enclosed an article from the October 30, 1991 Minneapolis "Star/Tribune." The "Star/Tribune" article states in part:

"Applicants for jobs as security guards are given a written test with

704 true-false statements, including: 'I am very strongly attracted by members of my own sex.' Male applicants must answer true or false to this statement: 'I have often wished I were a girl.'...Monday, a California appeals court ruled that the Minnesota discounter (store chain) must stop using psychological screening tests containing intrusive personal questions. The three-judge panel said the tests could not include questions about religion, politics, or sexual orientation, because they are not reliable predictors of job performance..."

Mr. Plummer replied: "My viewpoints are:

a. Pre-employment testing is acceptable and necessary to screen out applicants who are addicted to drugs or alcohol or are mentally unstable for jobs which directly involve public safety, such as policemen, firemen, airline pilots, mass transit train or vehicle operators.

b. "Engineers as well as all citizens are rapidly losing civil liberties as the U.S. Supreme Court has continued to lean further to the right during the last two administrations.

c. "I am undecided whether or not pre-employment testing, which could jeopardize the privacy of all new employees, should be used (or could even be effectively used) to screen out the small percentage of unstable job applicants who potentially might endanger fellow workers such as the disgruntled worker who recently returned to his workplace with a gun to murder his boss and several co-workers, or the unstable IBM employee who drove his truck through an IBM office plate glass window in Bethesda several years ago.

d. "If pre-employment testing is declared legal, I believe that strict safeguards should be implemented to maintain employee/applicant confidentiality to the extent possible."

'Massive Demobilization' Could Eliminate 200,000 Engineering Jobs

As many as 90 percent of the 234,000 defense engineers in the United States could lose their jobs as the result of the largest defense demobilization since the end of World War II, according to a prominent businessman who is also an econometrics forecaster. Speaking here on October 11 at the IEEE United States Activities Careers Conference, Robert Rivers made these observations about engineering supply and demand:

- The current supply of engineers should meet present demand, assuming real economic growth does not exceed an average 3.2 percent annually in the 1990s.

- Market forces work reasonably well to correct imbalances in engineering supply and demand.

- Engineers and their employers must be flexible and open to new opportunities.

Rivers is President of Aircom Corporation in Union, New Hampshire. Econometrics is the use of mathematical and statistical methods to develop economic theories.

In another conference session on "Engineering Manpower in the 1990s—Boom or Bust," EDN New Edition Careers Editor Donna Coco cited results of her magazine's survey indicating that engineering hiring is stagnant, salaries leveled off, and layoffs are up. Coco added that the inability of companies to find individuals with the "correct specialties" does not constitute an engineering shortage.

Engineering Manpower Commission Chairman Richard Ellis told the group of more than 100 engineers, scientists, and human resource specialists that women's participation in engineering is increasing—both in universities and the workplace.

But Wonsiewicz, U.S. West Advanced Technologies Science and Technology Vice President, stressed that companies have difficulty finding "quality engineers" who can benefit both their companies and society.

The IEEE-USA Careers Conference is the only national meeting devoted entirely to examining engineers' careers. The Institute of Electrical and Electronics Engineers, Inc. (IEEE) is the world's largest technical professional organization with more than 320,000 members in 145 countries.

(This IEEE news release is reprinted with permission of the author, Pender McCarter.)

Unbelievable 47% Of Engineers Age 59 And Over Were Eliminated From Employment Between 1990 And 1992

An analysis of age distribution of U.S. engineering employees indicates a substantial loss of employment for engineers age 59 and over during the past year. This conclusion was obtained from research conducted by the IEEE-USA Manpower Committee using data from the Engineering Manpower Commission (EMC).

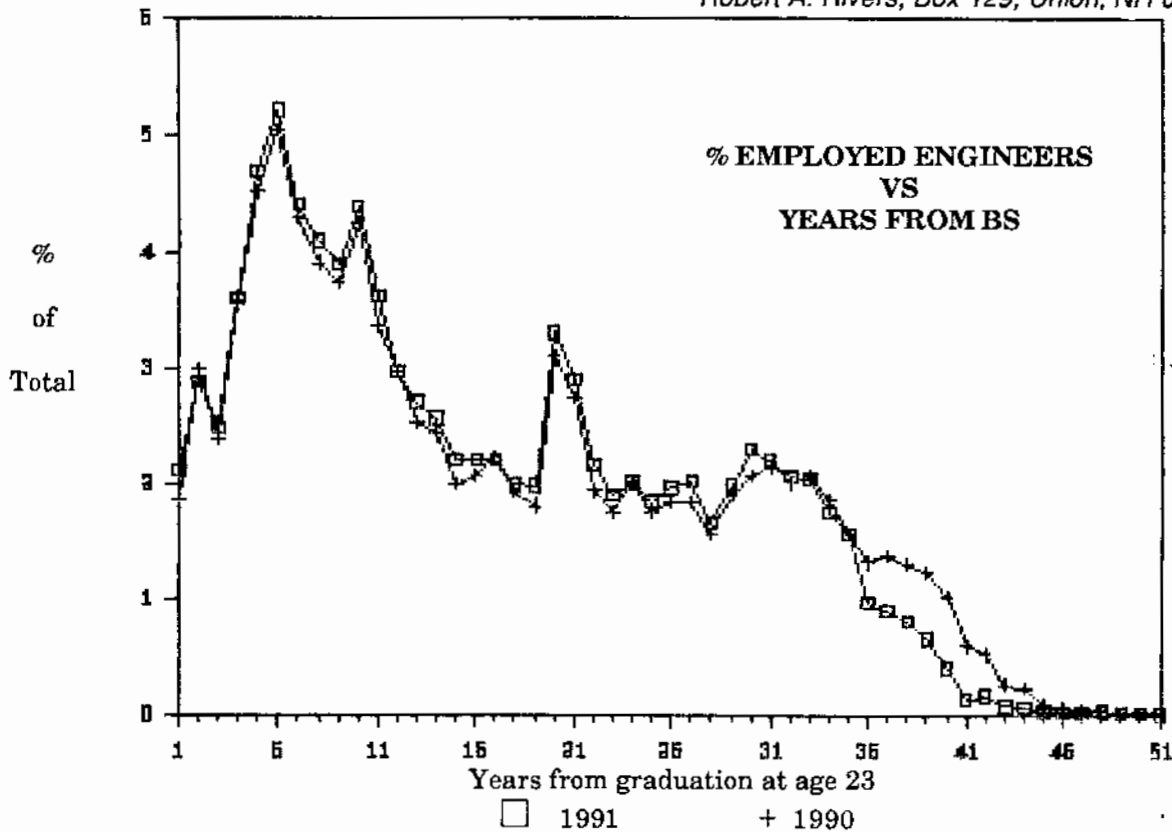
The closest estimate of U.S. engineering population is 1,864,000. Extrapolating the percentage loss in the survey sample from Bureau of Labor Statistics (BLS) Current Population Survey (CPS), the job loss amounts to 70,600 during the last year for the above age group. The total survey response counts were about 23,000: 11,000 for the 1991 statistics and 12,000 for the 1990 statistics shown in the figure. Here's how these results were computed.

The figure below shows what percent of employed engineers occupy each bracket of years from graduation. The median graduation age is 23. The figure contains two curves: one for data taken in 1990; the other for data taken in 1991. In order to compare the two populations, the 1990 distribution from year zero is compared with the 1991 population from year one, because the individuals were one year older in 1991. Note the similarity between the two curves up to 36 years from graduation (age 59), where the 1991 curve abruptly drops below the curve for 1990.

The total population of employed engineers 36 years from graduation is obtained by integrating the area under each curve starting at 36 years and continuing to 51 years from graduation (or wherever there is no area left under the curve). Integrating this area for the 1990 curve yields a figure of 8.06% of employed engineers age 59 and over. Integrating this area for the 1991 curve yields a figure of 4.27% of employed engineers age 59 and over. The difference is 3.79%. 1,864,000 engineers times 3.79% equals 70,600 jobs lost for engineers over age 59. Dividing the 3.79% job loss by the 8.06% jobs before the loss gives the 47% figure in the title of this article.

Do the BLS-CPS employment numbers tend to substantiate the magnitude of displacement? The four-quarter average of engineering employment in the third quarter of 1990 was 1,864,000, while the four-quarter average in the third quarter of 1991 was also 1,864,000, representing no employment growth in the 90-91 period. The employment system, however, is normally in a growth mode. The mid eighties showed an average growth of 46,000 jobs per year. The lack of growth could account for over half of the indicated displacement (of 70,600). Regardless of the reason for the job loss, should we expect to find the bulk of the loss at age 59 and over? Not unless some form of age selectivity took place.

Robert A. Rivers, Box 129, Union, NH 03887



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.

Editor's Column

In my last Editor's Column, I mentioned that the proposed IEEE constitutional amendment which would have made the Vice President for Professional Activities a voting-member-elected position, was defeated in the 1991 IEEE election. A proposed IEEE constitutional amendment is defeated, when it fails to obtain the required 2/3 majority vote, which in fact is what happened. But something more happened. Even if an amendment receives well over 66% affirmative votes, it still will not carry, unless at least 20% of eligible voters cast a ballot. This is the requirement for a "quorum." The vote tally announced in Jan/Feb '92 IEEE *Institute* indicated that only 18.5% of eligible voters voted. So this measure failed for two reasons: insufficient affirmative votes and lack of voter turnout.

It is appalling to me that IEEE members, the vast majority of whom are working engineers, do not take the trouble to cast a ballot. It costs only 5 minutes and first-class postage. The possible benefits are great, because even though many members of IEEE Boards of Directors are not pro-working engineers some are, and several IEEE Committees perform valuable service. So participation is worth the trouble. You can rest assured that I voted for the persons I thought were the best IEEE candidates and for the amendment. I urge AEA members who are also voting members of any old-line engineering society to vote in every election for which they receive a ballot. Try to get those societies to work for the practicing engineer, the way AEA does. If they don't do so in these economic times, ask them why in letters to the editors of their publications. Make them accountable.

Readers may recall the front-page article in the September '91 issue of AE, written by AEA member Dean S. Carpenter and entitled "Engineers: Today's Problem Solvers." The article discussed the "Type C personality": the individual who thrives on resolving chaos. It concluded that such a person is the archetypal engineer. We were pleased to learn that Stephen E. Scrupski, the Editor-in-Chief of *Electronic Design* magazine, based his October 24, 1991 editorial on the concepts in Mr. Carpenter's article. Mr. Scrupski mentioned AEA and gave the mailing address of AEA VP Richard Tax. AEA is grateful to Mr. Scrupski for finding merit in Mr. Carpenter's article and giving this visibility to our organization. We can continue to grow in size and scope of activities by continuing to receive visibility of this sort. Readers who would like to enhance our visibility can mail our articles to their favorite technical editors. There's more of this sentiment in the Reach Out column in this issue.

One fact about this newsletter should be obvious. "American Engineer", like other publications 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. Thus I rely on literary contributions from the Publications Committee of AEA, articles and letters from the readership, and news clippings for which I've received permission to reprint. I receive several ounces of news clippings per week from readers of AE, and I thank them for this input.

I often put a theme into an issue of AE. This issue contains several 'gloom and doom' articles, reprinted from sources around the country. View this as the theme of the month; there's a reason why I chose it now. The New Hampshire primary is the beginning of the year's election campaigning. This year's election is especially important, because it reelects or replaces the U.S. president. It behooves engineers all over the nation to pay close attention to their careers and the political scene. The economy is political, and it circumscribes your employability.

Robert Bruce, AE Editor

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.

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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.

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