GE NEWS

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'Engineers: Turning Ideas into Reality' is theme of Feb. 20-26 observance of National Engineers Week

IN TODAY'S ISSUE, LYNCHBURG GE ENGINEERS SHARE THEIR THOUGHTS ABOUT THIS YEAR'S THEME AS PLANS GET UNDER WAY TO HIGHLIGHT THE IMAGE OF THE ENGINEER AS INNOVATOR

"Too often people think engineers only apply scientific discoveries made by others. But engineers are problem solvers. They use their knowledge of science and mathematics in creative ways to find answers to questions posed by society's needs."

So reads the explanation of the theme, "Engineers: Turning Ideas into Reality," for this year's National Engineers Week event sponsored by the National Society of Professional Engineers. The annual event is always considered significant in the Lynchburg community, with special displays and exhibits, programs, visits by young people interested in engineering to various industries, etc. There'll be more about this in the News next week.

A special feature on pages 2 and 3 today is a guest editorial by MCBD Mobile and Station Engineering Manager Olin Giles who emphasizes the importance of both technology and teamwork in "ENGINEERING . . . THE KEY TO ACCELERATING PRODUCTIVITY." Beginning below, and bordering Olin's article on the pages which follow, are brief comments on this year's N.E.W. theme by a cross section of Lynchburg GE engineers–both younger engineers just entering the profession and those with years of experience.

GEORGE ROSE

"THE THEME ITSELF IS WHAT ENGINEERING IS ALL ABOUT."

"In my estimation, there are two aspects to reality. One is the making of something real or tangible. Customer's needs are translated into marketing input, then marketing presents us with the challenge of trying to convert those needs into a hardware or product," says George Rose, Manager-Personal Systems Engineering and Chairman of Lynchburg GE's National Engineers Week.

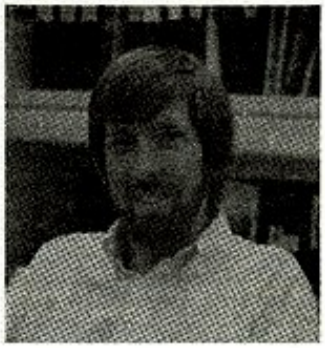
"There are a couple of problems that come into play," adds George. Two such constraints which he cites deal with time and cost, saying a product is "always needed more quickly than you have normal turnaround ability to do, and, the faster that you do something, usually the more costly it turns out." The reasoning behind this statement has to do with the fact that one does not have the time to explore alternative new tools which may be less expensive than the classic approach.

"Engineering is a way of life," says George. "It affects the way you think, the way you approach a problem." He considers every job to be a new challenge, and overall he says "it's fun--it has to be because it would drive you up the wall if you didn't like it."

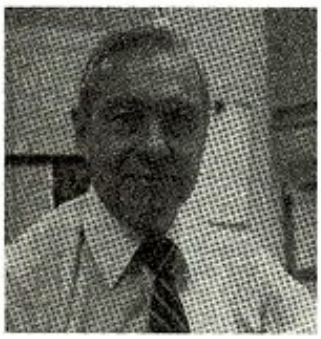
TERRY GARNER

"....TURNING IDEAS INTO REALITY IS A CONSTANT JUGGLING ACT."

"For the type of work we do, reality is designing a portable radio product," says Terry Garner, a Project Leader. "We have certain restraints placed upon us, such as we have to design, in a timely manner, a competitive product that is economically producible. Those constraints-being timely, being competitive and being economically producible--are somewhat compromising. Turning ideas into reality is a constant juggling act between those three items.



"You don't always have the time you'd really like to put into market research and engineering research, so you can't always use the latest and greatest technology available," Terry concludes."



HANK SCHAEFER

ENGINEERS: ". . . ONLY A PART OF THE WHOLE STORY."

"Engineers are creative," says Senior Mechanical Design Engineer, Hank Schaefer. "They provide the ideas and plans which initiate the process of turning ideas into reality." Hank, however, points out that engineers are "only a part of the whole story," saying "the efforts of many others are required to complete the job.

"The many supporting groups who supply information and services, as well as the people in the manufacturing areas all must contribute to the final product. ALL must share in the credit for bringing 'good things to life,' " says Hank.

ENGINEERING . . . THE KEY TO ACCELERATING PROD

Technology and teamwork are the essentials for su

Much has been written in recent years on the important role that productivity plays in our nation's economic health. Technology and innovation are popularly viewed as the cornerstones of our effort to accelerate the rate of productivity growth and thus bring about a higher standard of living for the human fraternity.

Next week is National Engineers Week, and in recognition of this annual event, the *News* has asked me to highlight some of the contributions of engineers. The role of engineers in shaping technology into innovative products is unquestionably the lifeblood of the process of improving productivity . . . thus my title: "Engineering . . . the key to accelerating productivity."

First let me establish a succinct definition for the word engineering. Here's my definition: *Engineering—the blending of the "right" technologies at the "right" time to develop a product or service to satisfy a market need.* That sounds simple enough, doesn't it?

Additionally, I'd like to focus on how contemporary engineers maximize teamwork in working with other business functions. Today's sophisticated products and services require that everyone in the business cooperate in executing each activity at maximum efficiency in order for the business to be successful. Competitors are always present to prey on those who fall short of this excellence.

Note the emphasis I placed on the word "right" in my earlier definition. I agree that it is a relative term, yet the determination of what is "right" is the key to one of the primary missions of engineering. Seeking this goal requires an intensive effort that spans the full gamut of the new product development cycle and involves many conflicting trade-offs along the way. The manner in which the engineer handles these conflicting design trade-offs is what allows him/her to bring creative excellence to the product or service and set it apart from the competition.

In a product's embrionic stage, engineers work with marketing to help establish the customer's needs and to identify the customer's desired features at the target price levels. Engineers convert these needs into a technology schedule and assess whether the economics of the technology are on target to the market price. Basically, this translates into the "right" technology at the "right" time. We are all familiar with products that appeared before their time and failed, as well as those that appeared too late and missed the market.

The manufacturing requirements are a second up-front consideration. For example: What types of processes are available or needed? Are new facilities needed? What features does manufacturing need to improve productivity? How can the product be tested to assure high quality? As in the previous instance, the same translation applies and the engineering trade-offs are the key.

And finally, a product or service has to meet the customer's anticipated application and service requirements with high quality and timely delivery. The "right" technology at the "right" time also has a significant impact in this arena.

While I have greatly simplified many of these tasks, the role of engineers in making trade-offs in each of these areas is crucial for success. Applying the principle of teamwork, the various functions provide the necessary inputs that are paramount to this process. Gone forever are the days—if indeed they ever existed—"when manufacturing built what engineering designed and marketing sold what manufacturing built."

How does all this contribute to the acceleration of productivity? Let me cite a few examples, starting with marketing:

- A product that most nearly meets all of the customer needs is easier to sell and easier to service. Consequently, the sales organization spends less time making the initial sale, and a satisfied customer is an excellent reference. All of this translates to improved sales productivity because the salesperson is able to spend more time calling on customers to obtain new orders.

- Manufacturing's productivity is also improved if the product is designed to take advantage of the most efficient assembly processes, especially those based on recent automation technology.

JOHN MAIN

"WITHOUT ENGINEERING, DONKEY KONG AND MS. PAC MAN WOULD ONLY BE REAL IN YOUR NIGHTMARES..."

"Taking the desires of Product Planners through the Engineering process creates the high technology devices we appreciate so much today," says John Main, who is a Project Engineer ME. He feels that Engineering "supplies the creativity, documentation and support activities that allow ideas to become real products. Without Engineering, Donkey Kong and Ms. Pac Man would only be real in your nightmares. . . ."

JEFF JOHNSON

AN INTERESTING ANALOGY.....

"An engineering degree is like a crock of horse manure," says Jeff Johnson, a Staff Engineer. "You can use it and grow something worthwhile, or you can take it for what it is--a crock of horse manure. In reality, engineering is not a bunch of mathematical equations. There is only one goal and that is to get the product out the back door so you can survive.

"It's a very simple philosophy," says Jeff. "If we do a good job designing things and getting them out the back door, this place will survive."

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CTIVITY
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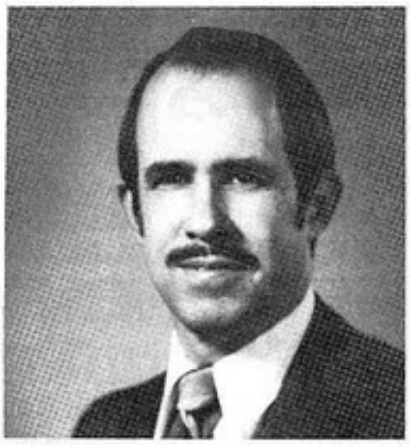
A guest editorial by

OLIN GILES

Manager-Mobile and Station Engineering



These processes permit higher through-put yields and higher quality, all of which contribute to higher productivity.

• Finally, this discussion would not be complete without noting the dramatic productivity improvements made possible by the miraculous world of microelectronic technology. The recent history of the discovery and the development of the microcomputer chip reads like a fairy tale. It's really hard to imagine, even to the most skilled engineers, that today there are semiconductor chips with the computational power of the largest computers of only a few years ago . . . and that they can be placed neatly on the tip of your finger.
Moreover, at the cost of a few dollars, these circuits are now present or are finding their way into the full range of products from electronics toys to jet engines and everything in between. By bringing "intelligence" to these products, benefits and features are now possible that could only be dreamed of a few years ago.
Now THAT'S a revolutionary improvement in productivity, and the engineering fraternaity brought about this development.

For too long now, the primary burden for improving productivity has seemingly rested with manufacturing and the efficiencies they might implement on existing products. Through the examples I have presented, it should be clear that NEW PRODUCTS offer the opportunity to bring about an acceleration in productivity. The role of engineers in shaping the technology in conjunction with teamwork from all functions is the key to successful new products, and hence, a healthy business.

BILL AGNOR

TURNING IDEAS INTO REALITY: "....INTERESTING AND CHALLENGING."

"Designing with microprocessors has allowed many new and creative ideas to be incorporated into our products," says Project Leader, Bill Agnor. "This provides the customer with many new features while allowing cost to remain competitive. I find my work very interesting and challenging when using microprocessors to turn ideas into reality."

J. J. VANDEGRAAF

"....THE UNDERLYING REALITY IS THAT IT IS COMPETITIVE."

"The process of translating new developments into practical reality has been speeded up within the past ten years," says J. J. (Hans) Vandegraaf, a Consulting Engineer. "We're reaching a phase where technology is pretty well settled, but the implications are not."

Using small computers and word processors as illustrations, Hans says "the applications are now beginning to really penetrate society." He feels that the next ten years will see some very major changes.

"Engineering is basically applied science," Hans continues. "We start out with a new scientific concept, and what we try to do is to turn it into something useful and affordable." In the outcome, Hans feels that "...the junction between science and economics is really the intersection where most engineering is done."

Hans concludes by likening the work of an engineer to that of Henry Ford, who "took a toy for the wealthy and turned it into a means of mass transportation. The same thing applies to calculators. We try to turn useful ideas into commercial reality."

STEVE WYNN

"TURNING IDEAS INTO REALITY IS TO SIMPLY HAVE THE DESIRE TO MAKE SOMETHING WORK."

For Steve Wynn, a Project Engineer, turning ideas into reality "is to simply have the desire to make something work. And it's a built-in desire inside you as a person." Whenever you have an idea or a goal to make the best product you can, "you've got to sit down and have in your head that you want to do it, and every problem that comes up you simply have to overcome," Steve adds.

A positive attitude is "what it takes," Steve feels. "Without that attitude, you can get defeated very quickly."

BRENT MYERS

"IT'S CHALLENGING, IT'S FRUSTRATING, IT'S FUN."

To Brent Myers, an IC Device Engineer, turning ideas into reality means "taking a concept, nurturing it, developing it, implementing it, and, in the end, hoping that it works." He feels that this year's theme is a good one in that it speaks for itself, saying "the only thing I can possibly add is to say that you hope it works in the end because so many times it doesn't."

Brent adds, "you hope that

no matter what your contribution is, it's unique and that you have added something to human knowledge no matter how small it may be."

MIKE SOKOP

"DEVELOPING TALENT TO KEEP THE BUSINESS COMPETITIVE AND PROFITABLE."

"In manufacturing," says Mike Sokop, an Advanced Quality Engineer, "we're developing our engineering talent to help keep the business competitive and profitable. We're applying these techniques with automatic assembly, tuning and testing of our products."

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NON-EXEMPT:	
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No openings	

Note: Information about exempt openings can be obtained from the weekly postings or by contacting R. Grofik at ext. 7221. Information on hourly and non-exempt openings can be obtained from weekly postings or by contacting C. De Bernard at ext. 7601.

All employment decisions are made without regard to race, creed, color, national origin, sex, age, marital status, veteran status, handicap, sexual orientation or affectional preference.

GE NEWS

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3 BR., 1½ BATH, KIT., L.R. with fire place, large den w/flu and woodstove, ac, Candler Mountain Road area, mid-50's. Call 845-4008.

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INFORMATION

$50. REWARD FOR IDENTIFICATION of person who cannot keep their hands off the red truck in the GE North lot. Call 945-6492.

SYMPATHY

Sympathy is extended to Janice and Wayne Penn upon the death of Wayne's mother. Janice works in National Marketing CSC.

Sympathy is extended to Frank Smith, who works the 1st shift at Bradley Park, upon the death of his father.

THANK YOU

The beautiful flowers and the kind expressions of sympathy were deeply appreciated. We would like to thank all of our friends at GE for their thoughtfulness during our loss of our mother and grandmother.

Al Rorrer and family

We want to thank all our GE friends and co-workers for their many kind expressions of sympathy extended to us during the recent loss of our mother.

May God bless you,
Betty Jennings
Mary Hamlett

DINNER AWARDS WILL BE SELECTED MARCH 1. Get your safety suggestions in and approved by your foreman. NO FORM NECESSARY.