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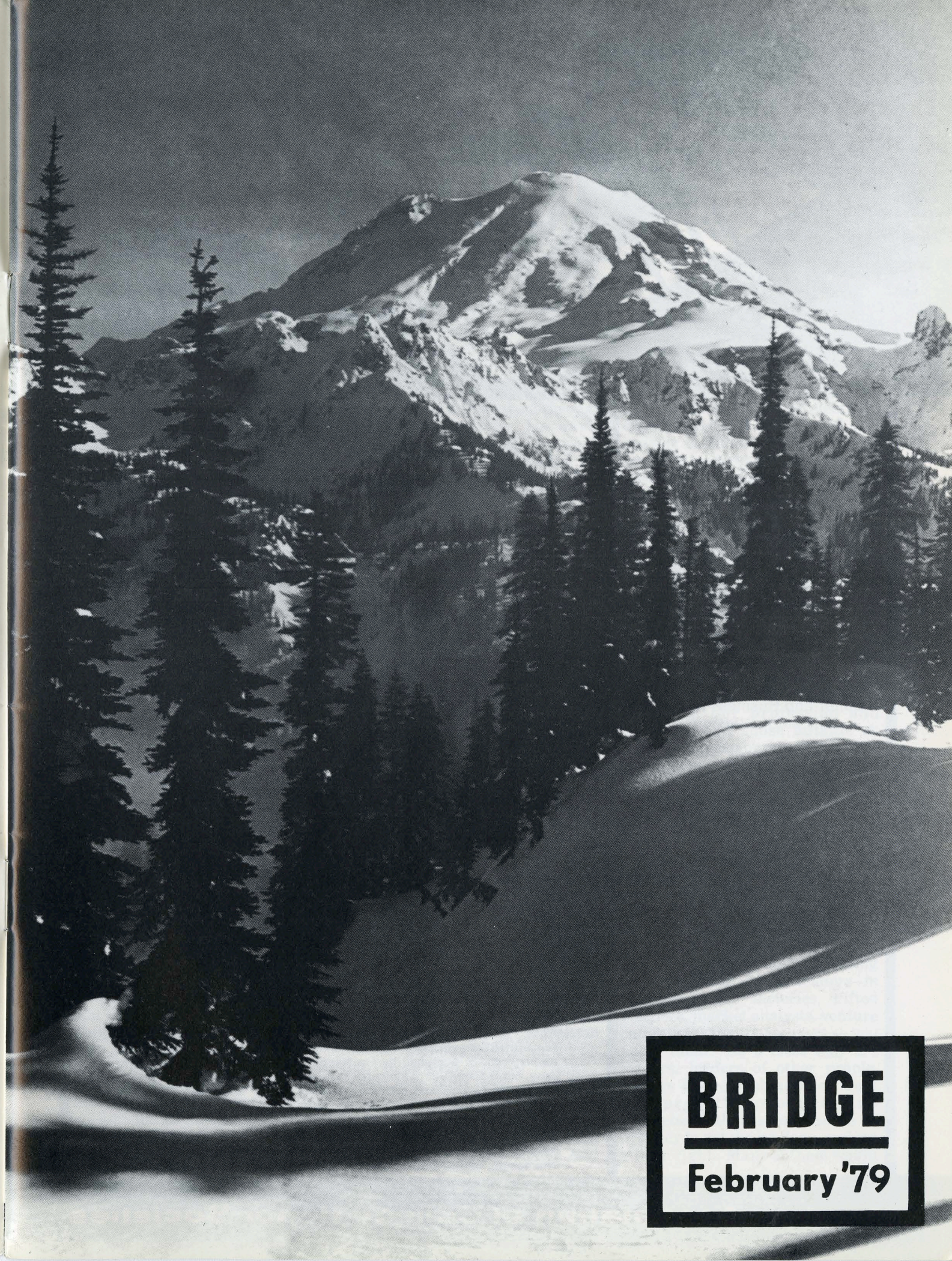
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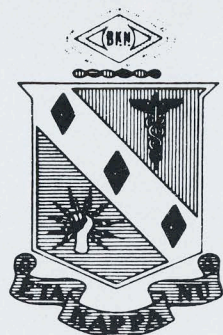
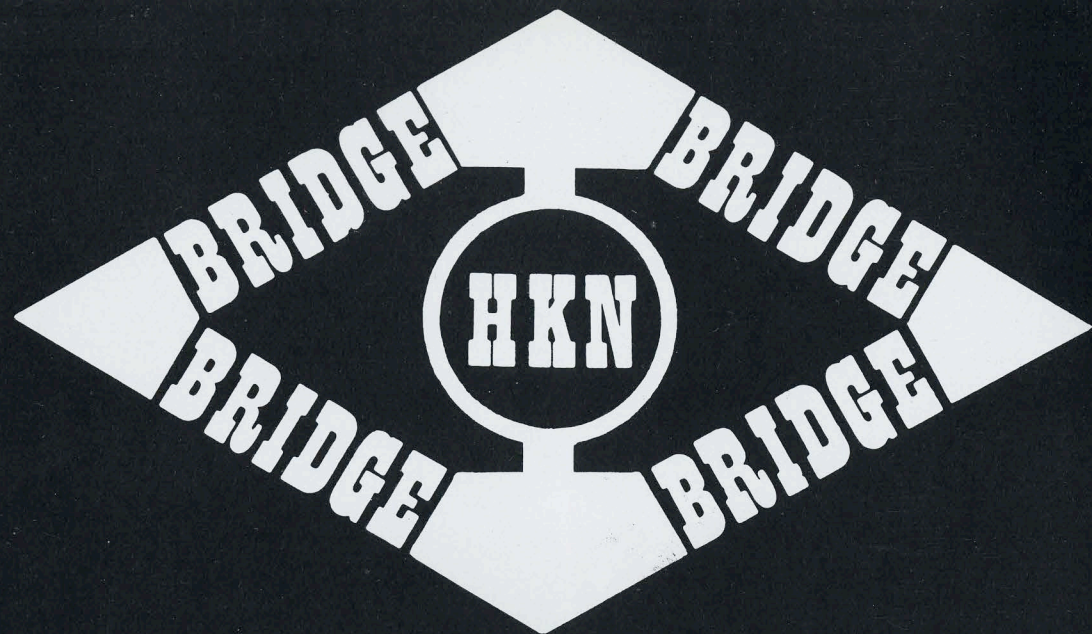
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BRIDGE

February '79



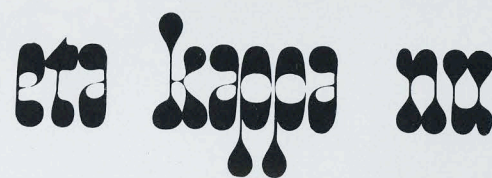
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Electrical Engineering Honor Society
February 1979, Vol. 75, No. 2

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The BRIDGE is published by the Eta Kappa Nu Association, an electrical engineering honor society. Eta Kappa Nu was founded at the University of Illinois, Urbana, October 28, 1904, that those in the profession of electrical engineering, who, by their attainments in college or in practice, have manifested a deep interest and marked ability in their chosen life work, may be brought into closer union so as to foster a spirit of liberal culture in the engineering colleges and to mark in an outstanding manner those who, as students in electrical engineering, have conferred honor on their Alma Maters by distinguished scholarship activities, leadership and exemplary character and to help these students progress by association with alumni who have attained prominence.

The BRIDGE is published four times annually—November, February, May, August—and is published by Eta Kappa Nu, Haywood Publishing Company, 5th & Ferry Sts., Lafayette, Indiana. Second Class postage paid at Champaign, Illinois and additional mailing office. Copyright, 1978, Eta Kappa Nu Association. Subscription price: three years, \$7.50; Life Subscription, \$30.

Address editorial and subscription correspondence and changes of address to: BRIDGE of Eta Kappa Nu, P.O. Box 2203, Station A, Champaign, Illinois 61820. U.S.A.

Electrical Engineering . . .

TODAYS VIEW OF THE PROFESSION

By Donald G. Fink
Director Emeritus, IEEE



The winds of change blow strong today in every field of endeavor, particularly so in our field of electrical engineering. The members of IEEE are particularly aware of new attitudes, new modes of action, new divisiveness and restlessness that affect the Institute. There is today a confrontation between members who insist that the Institute must be preeminently a technical institution and those who believe that its main concern must be the **well being of the member** in virtually every aspect of his professional life.

This is not the first time in the history of electrical engineering that such forces have been at work. In its first decades after its founding in 1884, the IEEE (then

known as the AIEE) went through a rapid evolution. Its early members, many of them poorly trained in the techniques of the day, were strongly dominated by the free-wheeling commercialism, of the then young industry. For the most part they were not free to act as individuals. It took 25 years of gradual enlightenment, led primarily by the academic community, before AIEE was ready to write, in 1912, a code of ethics that clearly established the individual responsibilities of its members. This code has been interpreted to call upon members to speak publicly against their employers if, in the members' conviction, their work posed a threat to the public welfare. This code is a part of our heritage today.

Concurrently, in those early days the right of the engineer to take public credit for his technical achievements as a speaker and author became firmly established, subject only to clearances that protected the employers' patent interests and competitive position. This privilege is now so well established that we can hardly imagine that it was won only through a ferment of argument and persuasion. No force has been so influential in promoting the rapid progress of our profession and our industry as this hard-won fight to publish.

We can well ask: will the present ferment of argument and persuasion leave behind it a new heritage, equally powerful in advancing the professional and

industrial ambitions of electrical engineering and electronics? My answer is that it will, but only if creative leadership is exercised in resolving the present conflicts. The issues must be clearly drawn. The interests at stake, public and private, must be subject to careful scrutiny and skillfully illuminated for us to find the balanced position in which the great majority of practicing engineers shall feel encouraged and rewarded throughout their careers.

In my view, this debate will focus strongly on the relationships between those in the "Establishment" of our profession and industry and those outside it. What do I mean by our profession's Establishment? It is the elite company of well trained, highly motivated, ambitious and skillful men and women who **make things happen** and who **call the shots**.

People so endowed often find themselves in positions of management, the so-called employing class. But our Establishment also includes many, perhaps a majority, who are not manager-employers. They may be innovators operating as individuals, team leaders in laboratories or factories, gifted teachers, market analysts, venture capitalists, quality assurers — you name them. As a class they are leaders, leaders of other people, leaders in the evaluation of ideas and projects, products and markets, with a strong sense of urgency to get the job done, and get it done right. Many of them would

deny vehemently that they are members of any establishment whatever. But as they are perceived by others, members of the Establishment they are.

Clearly such an array of gifted people is a very powerful institution. By making correct and constructive decisions, they set the tone for the advance of the profession and the industry. By making wrong, destructive, even corrupt, decisions they can wreak great harm. But such black against white distinctions between the good and evil potentials of the Establishment are, in my view, heavily overdrawn.

Much more common in our Establishment's decision making is the **judgment call**, in which one must read the fine line in the gray area between the right and wrong decisions where the balance of forces is complex and dynamic. The wrong decision in such closely drawn situations may be disastrous in its effects, but it is surely far less blameworthy than one reached on venal grounds.

It is evident that, because innovation in our field is so rapid and so dynamic, many such judgment calls must be made and so many near successes and near failures registered in the process. The failure of one great company to enter the transistor field early enough, the failure of several great companies to succeed competitively in the main-frame computer business are the results of judgment calls on the wrong side. The success of still another, smaller company in initiating the micro-computer revolution is a heartening example on the right side. Still another on the right side is the series of judgment calls made by the leader of one great company from 1954 to 1964 keeping alive the languishing compatible color television system until it was accepted in the marketplace.

It is only when we view our Establishment as a whole, all the people and organizations acting together in dynamic competition, that the central fact emerges: the sum of all the decisions, the clear-cut ones as well as judgment calls, has been heavily weighted on the right side. Some have lost, but many more have won.

In the field of electronics, for example, the impact of its Establishment over the past fifty years has had few equals in the history of human enterprise. Today, the worldwide sales of electronic goods and services exceeds \$100 billion dollars per year, equivalent to \$25 for every man, woman and child on the planet. The employment created by this worldwide enterprise supports millions of workers, including hundreds of thousands of electronics engineers and technicians.

I can remember the day, not forty years ago, when the total sales of electronics goods and services first passed \$100 million dollars. A growth of 1000 times since that time simply cannot be dismissed. Many gifted people have had the urge and the ability to get the job done. Most of them got it done, and done right.

The opportunity for engineering careers that came along with this growth needs no emphasis. One partial index lies in the IEEE statistics which show a membership increase of 10 times in 40 years, from less than 20,000 to approaching 200,000. When you ask IEEE Life Members now retired if they were happy to have been involved in this burgeoning profession, the large majority will answer, "of course." It has been a great time.

Why, then, is there currently so much disenchantment within the profession, so much of it directed at the very Establishment that provided the leadership behind this miracle of technical progress and expanding careers? To get at the cause, we must first identify who criticizes the Establishment. He or she is, for the large part, the person who is, or feels to be, "outside" the Establishment. (To be sure, there are vigorous critics within the Establishment, but they tend to use other channels than IEEE for voicing their concerns.)

Those "outside" of course far outnumber those "inside." Whereas as the leaders have the power, the drive, brains and other resources to make the decisions to supervise and plan the programs, they seldom are able to do the "actual work" of program execution. The follow-through must be

carried out by others in the work-force of the profession. Many of these workers, sometimes called the "working engineers," are called upon merely to follow instructions, using their training to implement rather than to plan or innovate. Often they are the younger members of the organization who are learning the ropes of higher responsibility and who will in due course enter the Establishment themselves.

This separation of function between management and work force is, of course, not new. But what is new, in the engineering professions at least, is a new attitude, a new expectation, in fact, a new demand. In broad terms that demand is that the managers in the Establishment shall have regard not only for the engineer's value to his enterprise as a worker, but also for his **identity**, his dignity and worth as an individual.

This craving for individual recognition as a person, not merely as a member of the engineering staff, is easier to satisfy in a small organization than in a large one. As the scale of operations in electrical engineering and electronics has grown, the size of the work force has grown proportionately, and important economies are realized in utilizing engineers in large groups, within which the engineer may feel that is a mere cog in the machine. To their credit, many well-managed large companies have recognized this tendency and have taken pains to keep work teams small. But in many types of work, and in many competitive situations, this has not been thought feasible. So the very growth for which the Establishment can take deserved credit has increasingly brought with it a separation of identity between the engineer and his boss.

The question has often been asked why engineers, when they feel aggrieved, have not taken the traditional road of other workers through the collective action of unionization. With few exceptions they have not done so, and to me the reasons are clear. First, unions cannot deal with the individual identities of their members, that is,

they cannot fill the very lack that so many engineers feel. Second, union, to be effective, must deal in large classes of workers whose pay and benefits are, at any one time, the same within each class. Extraordinary ability or extraordinary effort cannot be rewarded within the system; and below-standard ability and effort suffer little or no penalty. While some exceptions do occur, the mass approach is powerful, and typical. These truths of union operation offend the tradition of the great majority of engineers. So the electrical engineer has sought another route to a better basis at mutual understanding with his boss.

That search has led many engineering workers to the IEEE an institution that has, with the profession at large and the industry, prospered with the enormous growth of the industries of electrical engineering and electronics. As a vehicle for communication of engineer employees with management, the Institute has a lot going for it. It is the largest organization of engineers in the Free World. It has technical prestige matched by no other organization. It has had a steady growth in membership, now exceeding 183,000 members worldwide and still growing.

Most important, IEEE's membership includes not only large numbers of so-called working engineers, but also, a high proportion (relative to the industry at large) of engineers in middle and top management, as well as a large number of eminent teachers who enjoy the respect of both workers and managers. It is not strange, then, that the issues have emerged in IEEE's forum.

The signal event occurred in the early 1970's when a change in the IEEE Constitution, supported by 87% of the membership vote, gave the Institute an enlarged objective: to support the members in their professional concerns, not only in technical matters, but also **outside** the technical sphere.

From the beginning, this new direction aroused concern that the IEEE might have neither the resources nor the expertise to enter

these unfamiliar non-technical fields without damage to its established technical excellence. These fears persist and have in the past year been clearly expressed in the campaign oratory of the IEEE presidential election. The debate goes on vigorously and there are those who fear that the Institute cannot emerge from the present confrontation without suffering serious harm.

I am more optimistic. I am convinced that, subject to the provision that strong leadership prevails, the IEEE will emerge stronger, and the profession and the industry both will be the better for it. To achieve this end, IEEE members on both sides of the management-worker interface must participate in an active dialog, not only to resolve the technical-vs-non-technical confrontation, but to find the ways by which worker identity and worker productivity can be managed as common elements of our enterprise. Both sides have much to learn, to give and to take, from such an exchange.

The working engineer, on his side of the table, needs information on his status and prospects in the many aspects of his work that contribute to his self-esteem. How competent is he? How can he maintain and extend that competence throughout his career? Is he being fairly paid? What job security has he? Should he take more risks?

Second, he needs norms against which to compare his professional life. How does his status compare with that of others? The norms, for example, of compensation, retirement benefits, working conditions, and professional status are not widely known within the profession. At least, they were not widely known until IEEE began to collect and publish data, through membership surveys and studies, to develop these norms.

For example in 1972, the pay of the average IEEE member was \$19,100; in 1975, \$23,900; and in 1977, \$27,800, a progression of better than 7% compounded annually. The 1977 survey tells the member much about the value

of education, what fields and job functions are high-pay, what ones are low, in what fields pay hikes are generous, in what fields below average.

These data are the nuts and bolts of a major bridge between working engineers and management. When carefully conducted, (and the IEEE surveys have high marks thus far), such reviews serve the manager and the worker equally well in mending a key element in the identity separation: the question of what constitutes a fair month's pay for a fair month's work.

In my view, and I believe in the view of most IEEE members in management and among working engineers, these programs of fact-gathering by the Institute are constructive and well worth their modest cost. So are the Institute's programs of continuing education, its awards system of recognizing excellence, and many other activities outside the technical content of its conferences and publications. Our profession and our industry are far better for them.

I have confined my remarks to the improvement of manager-worker relationships, because within our profession, and particularly within IEEE, we have all the elements, all the people and methods, needed to work for better answers. I must not conclude however, without drawing attention to another area where we are not so richly endowed with talent, and that is our profession's relations with the rest of the world.

The rest of the world is a big place; it includes many communities whose actions will determine the future health of electrical engineering. Key among these are the communities of investment finance, government regulation, the legislative branch of government, and government administration. In only one of these communities can we say that our profession and our industry have enlightened and constructive relationships, and that one is the investment community. The thousand-fold growth of sales in electronics mentioned previously

has required great infusions of public and private capital that have, by and large, been forthcoming when needed. The reason for this confidence of investors is not hard to find: the industry has come up with a succession of new and improved products and services that the consuming community has wanted to buy. It has been a growth industry par excellence.

In most of the other areas of contact with the outside world, our Establishment has had neither the skills nor the patience to build up a solid record of constructive rapprochement. On the one hand, the increasingly high content of advanced technology involved in government decision making has required advice that only highly trained and accredited engineers can give. But their advice has been too often discounted, equitable and technically correct, though it may in fact be because it is perceived as serving selfish interests. Our industry is not alone in this frustration; others such as the gas, oil and automotive industries, have even less enviable records.

Bridging this credibility gap between government and electrical engineering is, in my view, the most urgent external task that our profession must shoulder. I have no magic formula. But I am convinced that the task does not start with educating the general public. The man in the street is too far from understanding the complex of laws and forces that underlie credible engineering advice. We must, rather, work directly with the decision makers, with patience and understanding of the forces within which **they** work. Above all, we must be more aware of the fact that engineering doctrine has its uncertainties, its compromises, its states of ignorance, and that it changes as new forces and facts emerge. Under these circumstances, giving sound technical advice is among the highest of the intellectual arts, requiring more effort and conscience than the practice of engineering itself.

In the last analysis we must beware of the tendency among many engineers to think of engi-

CHAPTERS

If your chapter has sent in news that does not appear here, it will be in the next issue. Bridge is always pleased to publish pictures of chapter members and activities.

EPSILON CHAPTER, Pennsylvania State University — On October 17, the Epsilon Chapter of Eta Kappa Nu held an initiation ceremony in which 29 new members were inducted into the organization. Later that month, we co-sponsored an informal student-faculty pizza party in cooperation with the local Student Branch of IEEE. The party was held at AKL fraternity.

At our January meeting, the guest speaker, Professor Richard A. Mollo, presented a talk about professional registration. Professor Mollo informed us about the advantages of taking the Engineer-In-Training test while we are still in school and described how engineering experience and further testing after graduation will ultimately lead to obtaining a Professional Engineer's license. The speaker also discussed state reciprocity policies and test content, and provided sample E-I-T examinations for interested members.

Recently, we worked in conjunction with the Faculty Curriculum Committee to compose a student curriculum survey in which both junior and senior students were asked to evaluate required and elective Electrical Engineering courses. Students were given the opportunity to share their ideas about the faculty and the depart-

neering and industry as ends in themselves, devoted to devising products and services that will find a customer. That view of our profession has served us well in the past, but it alone cannot serve to meet the needs of the future.

Carl Sagan, the noted astronomer in his bestseller "The Dragons of Eden," has said it well, "...the processes of rational thought are not ends in themselves, but must be perceived in the larger context of human good, the nature and direction of rational and analytical endeavors should be determined in significant part by their human implications..."

ment policies as well. The results have not yet been tabulated.

The officers for the 1977-1978 academic year are President, Jeffrey J. Rapp; Vice-President, David L. Bay; Recording Secretary, Dale L. Nafziger; Treasurer, Ronald J. Lagola; Corresponding Secretary, Dana V. Eales; Bridge Correspondent, Jerry K. Wagner. The faculty advisor is Professor George J. McMurtry.

by Jerry Wagner

NU CHAPTER, Iowa State University — Fall quarter for Nu Chapter began with the initiation of 19 new members. The pledge project was to rebuild the bridge that stands in front of the electrical engineering building on important occasions. In December, Mr. Glenn Walkup, manager of planning at Iowa Power and Light was our guest speaker. He discussed and answered questions on jog areas in power. Our chapter also sponsored a trip to the ATT long-lines facility in Boone, Iowa toward the end of winter. A large group visited the underground facility.

Other early to mid year activities included a tutoring service and the design of several Hobby Circuits included in the "Iowa Engineer" magazine. A big project in February was the presentation of an electronic tic-tac-toe game to Woodward State School for the Handicapped. We plan to continue with this by taking a tour of the school next fall and getting ideas for more projects.

Spring has kept us hopping with the election of new officers, and the initiation of 16 more members. Everyone has been busy preparing displays for the annual Veishea celebration in May. Some of the displays included a music synthesizer, an up-to-date handheld calculator exhibit, several made from scratch voltmeters, and various electronic toys and games. Our student/faculty picnic was a success with a good turn out, sun, and volleyball.

It's been a fun and rewarding year and we are in the process of planning another one next year.

by Karen Meinert

➡ 13

NEW YORK AWARD DINNER

by Donald Christiansen

Those of us who had the opportunity to attend the Eta Kappa Nu Recognition of the Outstanding Young Electrical Engineer in the United States in 1977, were in ourselves rewarded in a special way. Our five senses were treated royally. And by the way, you'll be glad to know that I was assured by one guest who claimed to have a sixth sense, that it too was not forgotten from all this.

The recipients of the awards this year, which was held during the IEEE Winter Power Meeting, were John G. N. Henderson from RCA Laboratories (winner), and Daniel P. Siewiorek from Carnegie-Mellon University (honorable mention).

Since 1936, 41 electrical engineers who are less than 35 years of age and who received their baccalaureate degree less than 10 years before, have received the

award and 92 of similar characteristics received honorable mentions. The award is given on the basis not only of what success the young electrical engineers have had in their vocation, but also what they did to broaden themselves culturally as well as what they have done for others. A review of what these engineers have accomplished since graduation is astonishing.

John G. N. Henderson, this year's award winner, has made original contributions to the advancement of television technology, and also has participated in civic and cultural activities. P. Siewiorek this year's honorable mention, has made contributions to the analysis and design of fault tolerant computing systems as well as participating in civic activities.

I am sure there are other

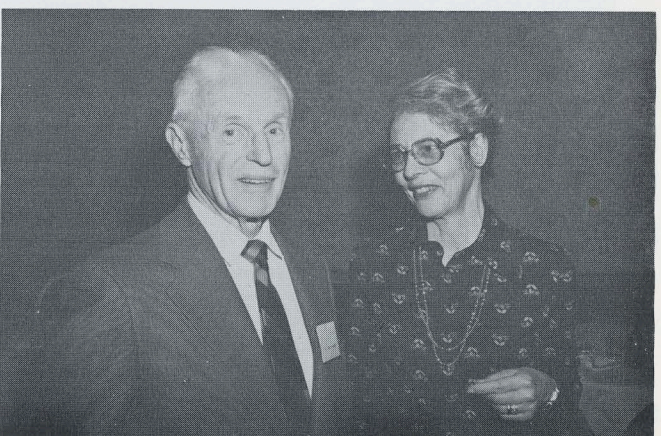
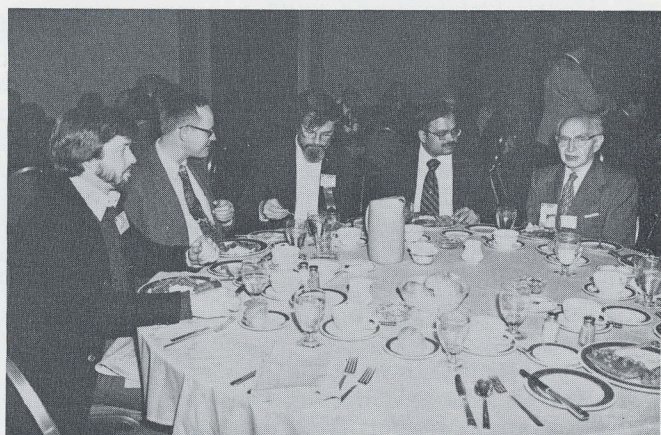
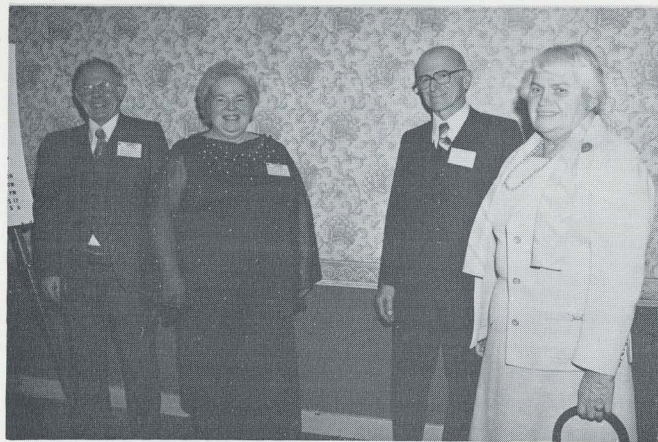
engineers who are worthy of this award as well. You can assist Eta Kappa Nu in discovering the most outstanding Recognition candidates by nominating worthy young electrical engineers from your company or acquaintance. Nomination blanks can be obtained by writing to:

Prof. Paul K. Hudson
Executive Secretary
Eta Kappa Nu Association
Department of
Electrical Engineering
University of Illinois
Urbana, Illinois 61801

Nominations should be returned to Prof. Hudson no later than May 31st of each year.

President Marcus Dodson presenting award to John G. N. Henderson. Other photos on next two pages.





General Motors Institute

The Installation Ceremony of Theta Epsilon Chapter of Eta Kappa Nu was held at the Flint Gold Club in Flint, Michigan, on March 15, 1978. Dr. Alan R. Stoudinger, Chairman of the Electrical Engineering Department at Tri State University performed the Installation Ceremony and presented the charter to Dr. Roger A. Holmes, Dean of

Academic Affairs at GMI.

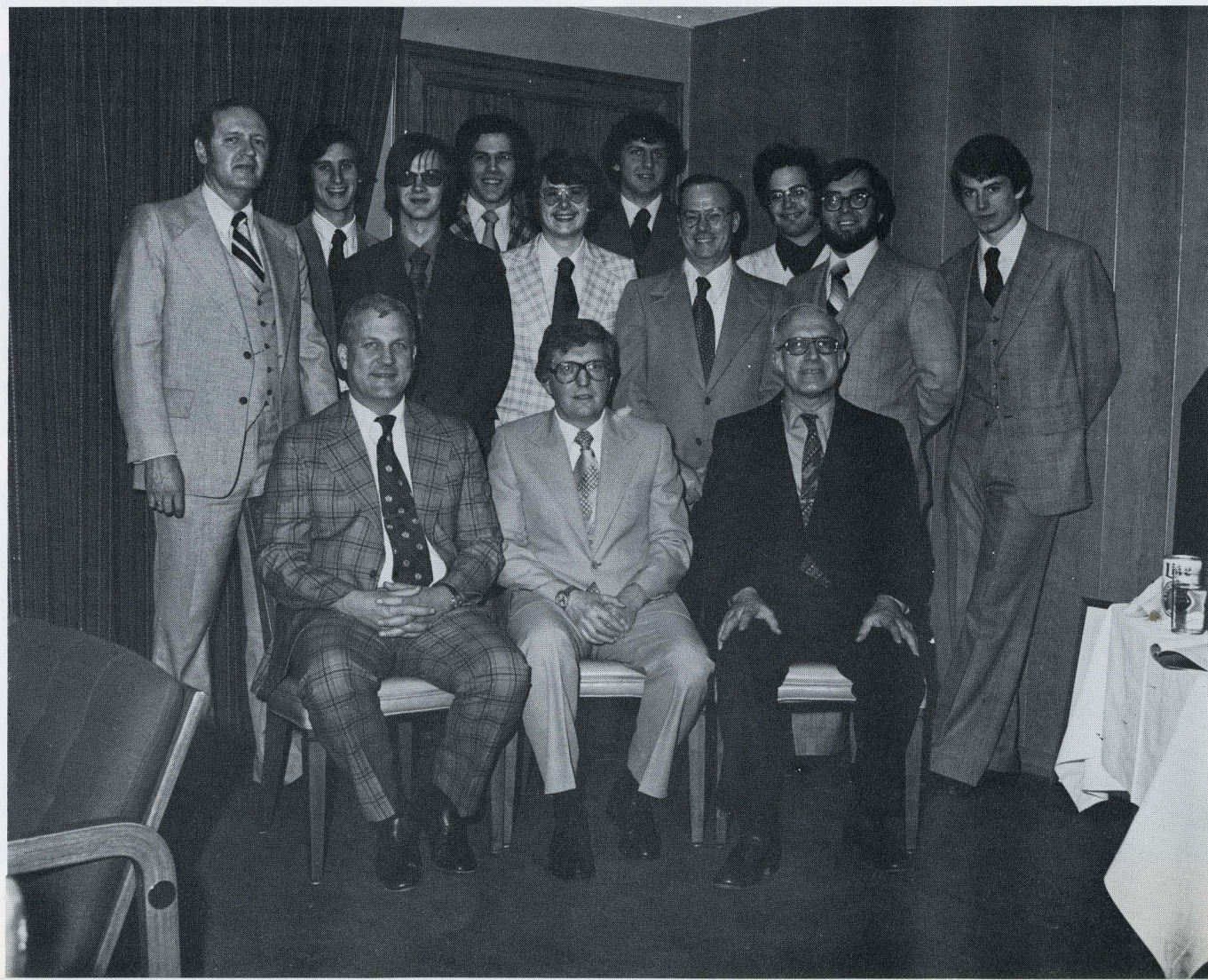
General Motors Institute is a college of engineering and management. It operates on the cooperative plan of education in which students alternate between periods of academic study on campus and related work experience in 130 sponsoring units of the General Motors Corporation throughout the United States and Canada.

Founded in 1919, GMI was a pioneer in the cooperative college plan.

GMI is the only accredited under-graduate college maintained by a single industrial corporation. In 1977-78 approximately 2,200 engineering and industrial administration students were enrolled in GMI.

SITTING: Roger A. Holmes (Dean of Academic Affairs), Prof. Alan R. Stoudinger (Installation Officer), Prof. Harley J. Anderson (Department Chairman).

STANDING: Prof. Alfred A. Arnold (Chapter Advisor), C. David Wright, Orest L. Storoshchuk, Andrew P. Strojny, Michael R. Grimes, John D. Phillips, Prof. William C. Till (Installation Team), William D. Cornwell, Prof. Gene H. Miller (Installation Team), Joel P. Streich.



SITTING Left to Right: David M. Matus, Michael Primm, Walter G. Dynow, Jerral A. Long, Prof. John Russell

STANDING: Prof. Alfred Arnold (Chapter Advisor), Prof. Alan Stoudinger (Installation Officer), John F. Duquaine, Prof. Terry Taebel (Installation Team), Steven V. Czarnecki, Michael J. Thielen, Prof. William Till (Installation Team)

8 CHAPTERS

ZETA KAPPA CHAPTER, Tennessee State University—The Fall Semester of 1977 was begun with a seminar for our sixteen potential candidates on "Eta Kappa Nu." The purpose of this seminar was to introduce them to the Society, and to acquaint them with Zeta Kappa Chapter. First, the filmstrip "History of Eta Kappa Nu" was shown. Next, our advisor spoke on the importance of being a member. Then our president gave an overview of the history of our chapter and presented the present members.

Socially, we participated in the coronation of Miss Tennessee State University. by Sheila M. Rogers.

ZETA PSI, Southern University—The Zeta Psi chapter of Eta Kappa Nu at Southern University in conjunction with the IEEE members began a library for students in the Student Center located in the E.E. building.

Plans have already begun for the initiation of new members.

Since snacks are somewhat of an inconvenience around lunch break for some students and faculty, the fund raising committee has been given the ok to sell refreshments from 11-1.

During Engineering Week the Chapter has decided for all members to wear their EKN shirts.

The final and last activity will be to present an Educational Engineering Program for underclassmen.

To the new members we wish success and an even more active year. by Joyce Jamerson.

BETA DELTA CHAPTER, University of Pittsburgh—As always, a major emphasis was placed on the tutoring program offered by the chapter. Our tutoring was not limited to EE students who needed help—we moved outside of the department and offered our services to all students who needed help in areas where we were knowledgeable.

Much work was done this term along the lines of helping the EE department

improve its curriculum by surveying student opinions and talking with the faculty. And, as in the past, the outstanding EE teacher and senior were chosen and honored. This year's recipients are Dr. Marwan Simaan and Leonard Karas.

Beta Delta is now looking forward to the annual banquet, which this year will be held in the William Penn Hotel, Pittsburgh, Pa. on April 1st.

BETA GAMMA, Michigan Technological University—The Beta Gamma Chapter at Michigan Technological University has kept pace with the dramatic enrollment increases in the Electrical Engineering Department at Michigan Tech by initiating twenty three new members in the past year. Twenty-one pledges were received into the chapter at the winter initiation while two CO-OP students were initiated this spring.

The traditional spring banquet was again held this year and the recipient of the "Professor of the Year" award was announced. Dr. J. A. Soper was

MERRY MOMENTS WITH MARCIA

"You have a very clean restaurant," remarked the patron to the owner.

"Thank you," replied the owner, "and what in particular prompted you to say this?"

"Everything tastes like soap."

* * * *

Second grader: "My teacher asked me if I had brothers or sisters."

Mother: "How nice of her to take an interest in you."

Second grader: "Yes, and when I told her I was an only child, she said, 'Thank goodness.'"

* * * *

An optimist is someone who tells you to cheer up when things are going his way.

* * * *

A young man lost on a road in Alabama asked an old farmer the way to Montgomery. The farmer scratched his head, thought a while, and issued a complicated set of directions.

Following the directions carefully, the young man found himself 30 minutes later, right back in front of the old farmer again. Exasperated at being misled, he shouted, "What's the big idea?" "Young feller," drawled the farmer, "I didn't aim to waste my time explainin' how to get to Montgomery 'til I found out if you could follow simple directions."



The teacher took her class to the zoo. When they passed the lion's cage, she asked "What's the plural of lion?"

One of the boys answered, "lions".

"What's the plural of sheep?" she asked.

One of the girls answered, "sheep".

"Right," said the teacher. A little further along they came upon a hippopotamus.

"What's the plural of hippopotamus?" the teacher asked little Johnney.

Johnney shuddered. "Who would want two of those?"

* * * *

Librarian: "Please be quiet. The people next to you can't read."

Boy: "What a shame! I've been reading since I was six."

* * * *

Inflation marches on, making it possible for people in all walks of life to live in more expensive neighborhoods without ever moving.

* * * *

A man wandered into a federal building and asked, "Is this the headquarters for the war on poverty?"

"Yes it is," replied the receptionist.

"Good," he said. "I've come to surrender."

* * * *

"Doc, I hate to bother you at 3 a.m. but I have a bad case of insomnia."

"Well, what are you trying to do," grumbled the awakened doctor, "start an epidemic?"

* * * *

One farmer asked his neighbor, "How many miles per gallon do you get with your new car?"

"I get seven — my teen age son gets the other twelve," the farmer replied.

by **MARCIA PETERMAN**

The Theta Eta Chapter at U.A.H. held its chartering banquet on April 29th, 1978, at the Noojin House on the campus. Dr. William A. Klos, Past President of Eta Kappa Nu, and Head of the Electrical Engineering Department at the University of Southwestern Louisiana, was the Installing Officer and banquet speaker.

Assisting Dr. Klos in the initiation ritual were Dr. Joseph C. Dowdle, Dr. Charles A. Halijak, and our chapter advisor Dr. Nadeem F. Audeh. All three are faculty members in the electrical engineering department at U.A.H.



Theta Eta University of Alabama at Huntsville



Charter members included:
JUNIORS: Jeff Belote; Marie Conrad, vice-president; Mark Horton; Terry Phillips, treasurer; Ron Shaffer, Bridge correspondent; James Turner.

SENIORS: Charles Bankston, corresponding secretary; Brian Cavanaugh; James Clark; Danny Ellenburg, recording secretary; Douglas Johnson; Clyde Jones; John Rose; Raymond Schansman, president; Virginia Smith; Timothy Wilhoite.

GRADUATES: Donald McPherson; James King; Nancy Perkins; Douglas Whisenant.

FACULTY: Mr. David G. Green; Dr. Carroll Johnson; Dr. Naim A. Kheir; Dr. Robert J. Polge; Dr. Robert L. Thurstone.

EVERETT LEE

On Sunday May 22nd, in the New York Hilton Hotel, the Board of Directors held a luncheon in honor of Everett Lee and Leland Spangler. They were each presented the Distinguished Service Award of the Association. Photographs of the luncheon are on the following pages.

Photos by Howard Sheppard

Everett S. Lee, formerly Chief Engineer of General Electric Company's general engineering and consulting laboratory in Schenectady, N.Y., was awarded the Distinguished Service Award of Eta Kappa Nu, the electrical engineering honor society. This award is the highest recognition, established in 1971 for contribution to the association, and Mr. Lee is the seventh recipient.

Mr. Lee, a long-time resident of Schenectady, was born in Chicago, Illinois. He received the degree of Bachelor of Science in electrical engineering from the University of Illinois in 1913, and of Master of Science in electrical engineering from Union College in 1913. He

was an instructor in electrical engineering at Union College and also a laboratory assistant at General Electric Company, Schenectady, from 1913 to 1916.

Mr. Lee became a mechanical expert for the Locomotive Stoker Company in Pittsburgh, Pa. during 1916 and 1917 and served as a First Lieutenant during World War I. He returned to the General Electric Company in 1919, first to the general engineering laboratory as division engineer. He became division engineer of the insulation division in 1923 and rose to assistant engineer of the laboratory in 1928, engineer in 1931, and engineer in the general engineering and con-

sulting laboratory in 1945, from which position he retired in 1956.

Mr. Lee was active in many committees of the American Institute of Electrical Engineers and was elected their president in 1948. He held membership and participated in many other professional organizations which include the following: American Standards Association, American Society of Mechanical Engineers, Institute of Radio Engineers, American Society for Engineering Education, New York State Society of Professional Engineers, National Society of Professional Engineers, American Society for Testing Materials, and The Newcomen Society of England-North American Branch.

Mr. Lee has been active in Eta Kappa Nu, the electrical engineering honor society, for many years. He served as national vice president, and president, and continues to serve as member of the Awards Organization Committee.

Mr. Lee is a past president of the Schenectady Kiwanis Club. In Schenectady he has been active in The Boy Scouts, The Boys Club, Little League Baseball, and the YMCA. He has served on the Schenectady Bureau of Research and The Planning Commission.

Mr. Lee is a member of the Union Presbyterian Church and resides with his wife Louise, Nee Geiger, at 1350 Wendell Avenue, Schenectady, New York.



LELAND SPANGLER

Born in Lohrville, Iowa, on September 18, 1896, Leland A. Spangler started his schooling there a few years later. He expanded his pre-college learning adventures in Ames, Iowa and Boulder, Colorado. Iowa State University is where he studied electrical engineering from 1914-1917 and from 1919-1921. In the interim period, Leland served in the U.S. Army, eventually as Assistant Band Leader which afforded the opportunity to travel throughout the U.S.A. and France.

In college, he tooted the cornet six nights a week for a year in a theater orchestra. Leland then joined a dance band which paid more money. In addition, he took part in several extra curricular activities including a term as president of the student branch of AIEE, treasurer of the Engineering Society and editor of the Iowa Engineer.

Notwithstanding all these extracurricular activities, Leland excelled in his scholastic work as well. Consequently, he was elected to Tau Beta Pi, Phi Kappa Phi, Sigma Delta Chi, and Eta Kappa Nu, all of them honorary societies. He also became a member of Phi Kappa Psi, a social fraternity.

After graduation, Leland A. Spangler became known as "L.A." to his friends and associates in Westinghouse Electric and Manufacturing Company at East Pittsburgh and later in Chicago, Illinois. He specialized in sales of electrical equipment to the railroads.

"L.A." became active in the Chicago Alumni Chapter soon after he arrived in the windy city. He served as president of that chapter in 1929-30.

This was a very troublesome era for Eta Kappa Nu, financially, chapter-wise, and otherwise. The

24th National Convention (1928-1929) was an important and busy one. It was presided over by President E. S. Lee. J. A. Umhoefer was chosen from among five candidates to be the first Executive Secretary and Bridge Editor under a newly formed national organization. Three years later, Brother Umhoefer resigned. This action prompted several suggested operating alternatives, including one from Chicago and another from New York Alumni Chapters. The major problems then were the financial losses primarily caused by increasing convention costs, the high assessment for new initiates and the need for a new Executive Secretary and Bridge Editor.

President G. H. Kelley reported the solution as follows:

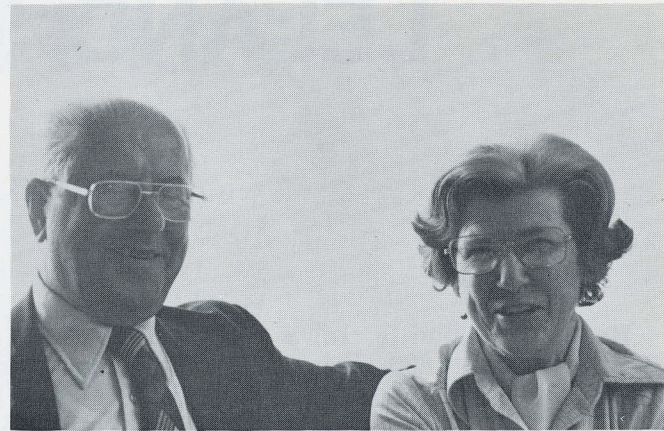
1. Move Executive Secretary's office from New York to Chicago.
2. Reduce Executive Secretary's salary from \$2,400 to \$2,200 per annum.

3. Eliminate office rent expense by including an allowance in the reduced Executive Secretary's salary.
4. Reduced printing costs of The Bridge.

He also recommended L. A. Spangler as executive secretary for a term to be determined by the National Convention. After a spirited discussion, L. A. was appointed as a part-time executive secretary. Also, the biennial convention concept was agreed on and a chapter visitation plan was instituted in the alternate years. Brother Spangler and the other national officers handled the affairs of HKN very well during these trying times.

"L. A." wrote six articles for The Bridge besides editing and putting to bed all the issues during his three-year term as editor. In 1936-37 and 1937-38, Leland served successively as National Vice President and President of HKN.

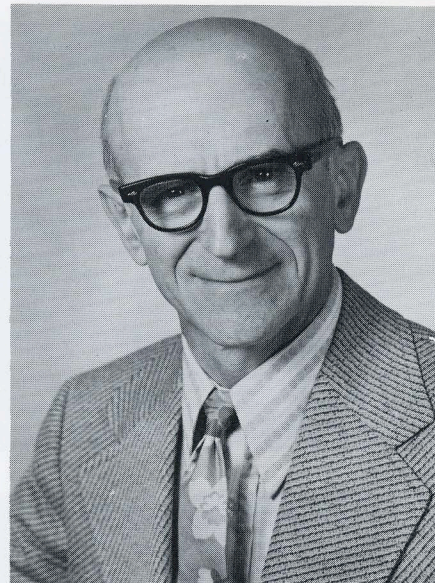




Words Of The Wise

A Book Review

BY BERT SHEFFIELD



Not since I savored Ashley Montagu's "The Natural Superiority of Women" some twenty years ago, have I been so moved with, and enthused about, a new book on an allied subject. I am referring to Marcille Gray Williams' "The New Executive Woman — A Guide to Business Success", published in 1977 by Chilton Book Co., Radnor, Pa., (233 pages including a 5-page index). (\$9.95)

Though the book is intended for women, I found many of the suggestions personally useful. Ms Williams, herself a successful business executive, is an inspiring and versatile teacher indeed — for women and men alike, in my opinion.

Ms Williams has impressive credentials to back up her claims. She rose meteorically from teenage secretary and developed her techniques on the way up to advertising copywriter and later to ad manager for an electronics firm. At age 22 she established her own advertising firm and, as its president, built it to over one million dollars in billings with a staff of six employees — mostly men. But this is only the beginning. The flyleaf tells more about this enterprising young lady, and her book proves her case.

To the male claim that " — Female executives are normally twice as good as their male counterparts" she replies that

"Women who have succeeded have had to be twice as good —". And she shows step-by-step how it can be done — how to think and act like a pro, and how, for instance, to deal with (male) chauvinism. She directs "—behave like an executive" if you want to be one. And she expands: "Don't be the only person taking notes — and if you do, always on a pad, never in a steno note book!" She adds that as a woman executive you must never admit "you know stenography" and "never type your own letter" and "rarely get the coffee". The last few times she was asked to get coffee she flatly refused; the requests stopped.

In other sections she instructs how to relate to the locker room fraternity. She knows the games, the rules, the jokes, and can hold her own in all these as well as on the scores. She teaches how to manage one self and others, how to hire and fire; how to praise and how to criticize.

Ms Williams has quick answers for detractors, friendly but firm. To the male needler who quipped: "You're the best looking production manager I've ever seen" she replied sweetly "I didn't know what I looked like had anything to do with my job."

Other chapters in this thoroughly enjoyable book include "Whatever you do don't cry", "Learn to leash your libido" (and how to behave

with the other sex), "Business entertaining", "Traveling for business", "Dressing for success", etc. Her chapter "Strategies for success" offer sensible and practical techniques, and, in my opinion, should be required reading for beginners (and others) of either sex. Her guidance for one's action under a variety of circumstances provide real-life practical suggestions when fired or laid off, leaving or looking for a job, handling an interview, asking for a raise and even starting your own business. Her "A dozen do's for executives" ties a neat ribbon around a scintillating 233 page book.

Two defects were noted in this otherwise flawless presentation. Ms Williams appears to recommend the application of the biorhythm theory fad which is supposed to govern ones physical, intellectual and emotional cycles. This theory was termed a "Masterpiece of Teutonic crackpottery" in a study by Martin Gardner, who is known for his "games" column in the Scientific American magazine. He examined the biorhythm theory in detail in his book "Mathematical Carnival" (Knopf 1975), in the chapter "The numerology of Dr. Fliess", p. 150-160.

Another defect relates to what I could only dub the "dirty tricks



Carl T. Koerner

1908 - 1978

Friends and Brothers of Carl Koerner will be saddened to hear about his passing suddenly while on a vacation trip in New Mexico. He had a very distinguished and full career as an engineer, professor, lecturer, author, editor and consultant. He was National President of Eta Kappa Nu in 1957-58 and contributed liberally to the "Bridge" over many years as author and assistant editor. Carl had retired from the Pacific Telephone Company in 1973, after serving over thirty-five years. He held positions as staff engineer, supervisor, expert witness and other key positions for the company.

Since retiring, Carl was very active as a consultant. His most recent work was planning the complete communications systems for a large new city to be built in Saudi Arabia.

Carl was a family man and is survived by his wife, Edith, a son, William C. Koerner, Engineer and a daughter, Margaret K. Goodrich.

The funeral was conducted at the Little Church of the Flowers in Forest Lawn Memorial Park, Glendale, California. This church is a faithful re-creation of the lovely little church at Stoke Poges, England, where Thomas Gray composed his inspiring poem, "Elegy Written in a Country Churchyard." Gray wrote the poem in honor of the memory of his dear friend Richard West. On the following pages we present the full text of the Elegy in honor of the memory of our dear friend Carl T. Koerner.



Gray's Elegy

presented in memory of

Carl Koerner

The Curfew tolls the knell of parting day,
The lowing herd wind slowly o'er the lea,
The ploughman homeward plods his weary way,
And leaves the world to darkness and to me.

Now fades the glimmering landscape on the sight,
And all the air a solemn stillness holds,
Save where the beetle wheels his droning flight,
And drowsy tinklings lull the distant folds;

Save that, from yonder ivy-mantled tow'r
The moping owl does to the moon complain
Of such as, wandering near her secret bow'r,
Molest her ancient solitary reign.

Beneath those rugged elms, that yew-tree's shade.
Where heaves the turf in many a mould'ring heap,
Each in his narrow cell for ever laid,
The rude Forefathers of the hamlet sleep.

The breezy call of incense-breathing Morn,
The swallow twitt'ring from the straw-built shed,
The cock's shrill clarion, or the echoing horn,
No more shall rouse them from their lowly bed.

For them no more the blazing hearth shall burn,
Or busy housewife ply her evening care:
No children run to lisp their sire's return,
Or climb his knees the envied kiss to share.

Oft did the harvest to their sickle yield,
Their furrow oft the stubborn glebe has broke;
How jocund did they drive their team afield!
How bow'd the woods beneath their sturdy stroke!

Let not ambition mock their useful toil,
Their homely joys, and destiny obscure;
Nor Grandeur hear with a disdainful smile,
The short and simple annals of the poor.

The boast of heraldry, the pomp of pow'r,
And all that beauty, all that wealth e'er gave,
Awaits alike th' inevitable hour.
The paths of glory lead but to the grave.

Nor you, ye Proud, impute to These the fault,
If Mem'ry o'er their Tomb no Trophies raise,
Where thro' the long-drawn isle and fretted vault
The pealing anthem swells the note of praise.

Can storied urn or animated bust
Back to its mansion call the fleeting breath?
Can Honour's voice provoke the silent dust,
Or Flatt'ry soothe the dull cold ear of Death?

Perhaps in this neglected spot is laid
Some heart once pregnant with celestial fire;
Hands, that the rod of empire might have sway'd,
Or wak'd to ecstasy the living lyre.

But Knowledge to their eyes her ample page
Rich the spoils of time did ne'er unroll;
Chill Penury repress'd their noble rage,
And froze the genial current of the soul.

Full many a gem of purest ray serene,
The dark, unfathom'd caves of ocean bear:
Full many a flower is born to blush unseen,
And waste its sweetness on the desert air.

Some village-Hampden, that with dauntless breast
The little Tyrant of his fields withstood;
Some mute inglorious Milton here may rest,
Some Cromwell guiltless of his country's blood.

Th' applause of list'ning senates to command,
The threats of pain and ruin to despise,
To scatter plenty o'er a smiling land,
And read their hist'ry in a nation's eyes,

Their lot forbad: nor circumscrib'd alone
Their growing virtues, but their crimes confin'd;
Forbad to wade through slaughter to a throne,
And shut the gates of mercy on mankind,

The struggling pangs of conscious truth to hide,
To quench the blushes of ingenuous shame,
Or heap the shrine of Luxury and Pride
With incense kindled at the Muse's flame.

Far from the madding crowd's ignoble strife,
Their sober wishes never learned to stray;
Along the cool sequester'd vale of life
They kept the noiseless tenor of their way.

Yet ev'n these bones from insult to protect,
Some frail memorial still erected nigh,
With uncouth rhimes and shapeless sculpture deck'd,
Implores the passing tribute of a sigh.

Their names, their years, spelt by th' unletter'd muse,
The place of fame and elegy supply:
And many a holy text around she strews,
That teach the rustic moralist to die.

For who to dumb Forgetfulness a prey,
This pleasing anxious being e'er resign'd,
Left the warm precincts of the cheerful day,
Nor cast one longing ling'ring look behind?

On some fond breast the parting soul relies,
Some pious drops the closing eye requires;
Ev'n from the tomb the voice of Nature cries,
Ev'n in our Ashes live their wonted Fires.

For thee, who mindful of th' unhonour'd Dead,
Dost in these lines their artless tale relate;
If chance, by lonely contemplation led,
Some kindred Spirit shall inquire thy fate.

Haply some hoary-headed Swain may say,
'Oft have we seen him at the peep of dawn
'Brushing with hasty steps the dews away
'To meet the sun upon the upland lawn.

'There at the foot of yonder nodding beech
'That wreathes its old fantastic roots so high,
'His listless length at noontide would he stretch,
'And pore upon the brook that babbles by.

'Hard by yon wood, now smiling as in scorn,
'Mutt'ring his wayward fancies he would rove,
'Now drooping, woeful wan, like one forlorn,
'Or craz'd with care, or cross'd in hopeless love.

'One morn I missed him on the custom'd hill,
'Along the heath and near his fav'rite tree;
'Another came; nor yet beside the rill,
'Nor up the lawn, nor at the wood was he;

'The next with dirges due in sad array
'Slow thro the church-way path we saw him borne.
'Approach and read (for thou can'st read) the lay,
'Grav'd on the stone beneath yon aged thorn.'

THE EPITAPH

Here rests his head upon the lap of Earth
A Youth to Fortune and to Fame unknown.
Fair Science frown'd not on his humble birth,
And Melancholy mark'd him for her own.

Large was his bounty, and his soul sincere,
Heav'n did a recompense as largely send:
He gave to Mis'ry all he had, a tear;
He gain'd from Heav'n ('twas all he wish'd) a friend.

No farther seek his merits to disclose,
Or draw his frailties from their dread abode,—
(There they alike in trembling hope repose),
The bosom of his Father and his God.

this years award winner. Dr. Soper was chosen under a completely new procedure. Nominations for the award were opened up to the entire student body in the Electrical Engineering Department. The three professors with the most nominations then had their names submitted to the chapter for final approval.

New officers were elected at the close of spring term. The new officers are: Chuck Dickerson, President; Jere Hornug, Vice-president; Donald Rasmussen, Recording Secretary; Marwan Ourfali, Corresponding Secretary; Gerald Wirth, Bridge Secretary; and Edward Kass, Treasurer.

by Gerald J. Wirth

GAMMA PHI CHAPTER, University of Arkansas — The Gamma Phi Chapter of Eta Kappa Nu held a Smoker on September 19, 1977. As a result of this meeting ten people went through the pledge program and were initiated on October 24, 1977. After the initiation plans were finalized concerning the Science Demonstration given by Mr. Jack Bayles of Southwestern Bell. Mr. Bayles gave an interesting talk entitled: "The Bell Systems Concern for Speed and Quality in Communication." One demonstration involved communication over optical fibers with lasers.

This semester the Smoker was held on February 2, 1978. Five pledges were selected to go through the pledge program and be initiated on March 2, 1978. At the business meeting held immediately after the Smoker an awards committee was set up to select the outstanding sophomore of the 1977-78 year. This award will be given at Honors Day Convocation on April 25, 1978. There was also discussion about having a picnic or canoe trip later in the spring.

by Thomas J. Kiene

20 ◀ BOOKS

department". She suggests that dirty tricks should not be used, but she does, nevertheless, describe some. And that did not sit very well with me.

These defects, however, are minor in relation to the rest of her excellent book. Ms Williams' book provided provocative, instructive and thoroughly entertaining reading.

GAMMA SIGMA, University of Utah — In the past the society of Eta Kappa Nu at the University of Utah was not well known on campus. Our chapter is trying to let the Electrical Engineering students become aware of the organization. We have sponsored various activities for department participation. During Fall quarter we held the First Annual Eta Kappa Nu Tennis Tournament. We also planned to involve students in volleyball activities and skiing trips to the Greatest Show on Earth in our Utah resorts.

Our chapter is working with the IEEE Branch at this school to get a broader cross-section of student participation. We held a raffle at Christmas time to raise money for a Sub for Santa project. We helped five families supplement their Christmas.

Just recently our group made and sold hot dogs to the Engineering students and observers at our Engineering Week Contest. The Electrical Engineers held a Precision Car Contest, where the car must travel 17 m. in 75 sec. We are in the process of preparing for our Spring Initiation.

The officers for the 1977-1978 year are: President: Mike Sims, Vice-President: Harold Blomquist, Treasurer: James Darabond, Recording Secretary: Ada Luque, Corresponding Secretary: Steven Hadfield, Bridge Correspondent: Janet Poulson

by Janet Poulson

GAMMA IOTA CHAPTER, University of Kansas — We had a fairly active year this year, with many members getting involved in a project for the school's annual Engineering Exposition. Our exhibit was entitled "Tubes to Transistors to Tomorrow" and displayed in three ways the evolution of the age of computing. First, several members got together to build three decade counters, one from tube technology, one from transistor tech. and one from IC tech. These were displayed along with descriptive posters illustrating the advances made in power consumption, size, cost, maintenance, etc. Second, several members compiled a pictorial "history of computing" which showed pictures of important devices and people from the age of the abacus to the microprocessor. Third, we persuaded a professor in the Computer Science Dept. to loan us his personal collection of various historic and nostalgic computer hardware to put on display. All in all, a very effective exhibit.

In addition, several members of Eta Kappa Nu and IEEE worked on a microprocessor control system for an electric car as an independent study project and an exhibit in the Expo. They also won one of the Bendix Competition prizes with this entry.

Finally, HKN and IEEE sponsored a spring picnic for the EE department at large. Many faculty and upper-classmen turned out for BBQ beef, covered dishes, softball, volleyball, and lots of beer. It was a grand old time for all.

I feel we've had a good year and have given Gamma Iota a shot in the arm. I know we've all benefited from our participation in the active membership in Eta Kappa Nu.

by Michael Mertz

EPSILON ZETA, University of Lowell — The Epsilon Zeta Chapter is happy to report that we have been very busy the past year, and that we are currently working on our long range projects.

The conclusion of our fall pledge period saw the initiation of 34 new brothers, which was followed by the traditional banquet, in their honor.

A list of the projects on which we have been working include; super notes I (study guides for introductory circuit theory), tutoring of various E.E. courses and the establishment of a tutoring lounge, the founding of Phi Kappa Phi on campus and our annual raffle.

Amongst our long range projects we have replaced our job index with a company information file, which is designed to provide information on companies with which the student, may desire interviews or have an interest, and our lecture series, in which members of the academic and industrial community speak on current topics, has been well received by all.

Through progressive leadership and with high enthusiasm we have enjoyed a very fulfilling year, during which, those of us who are graduating have been convinced that the high caliber of faculty and students, with which we have worked and studied, will provide many more successful generations of achievers in HKN.

Our officers for the past year have been: Frank Denecke, president; Robert Desmarias, vice president; Michael Kutlowski, treasurer; Dennis Morrison, recording secretary; Patrizia Leonessa, corresponding secretary; Brian Rich, Bridge correspondent.

by Brian E. Rich