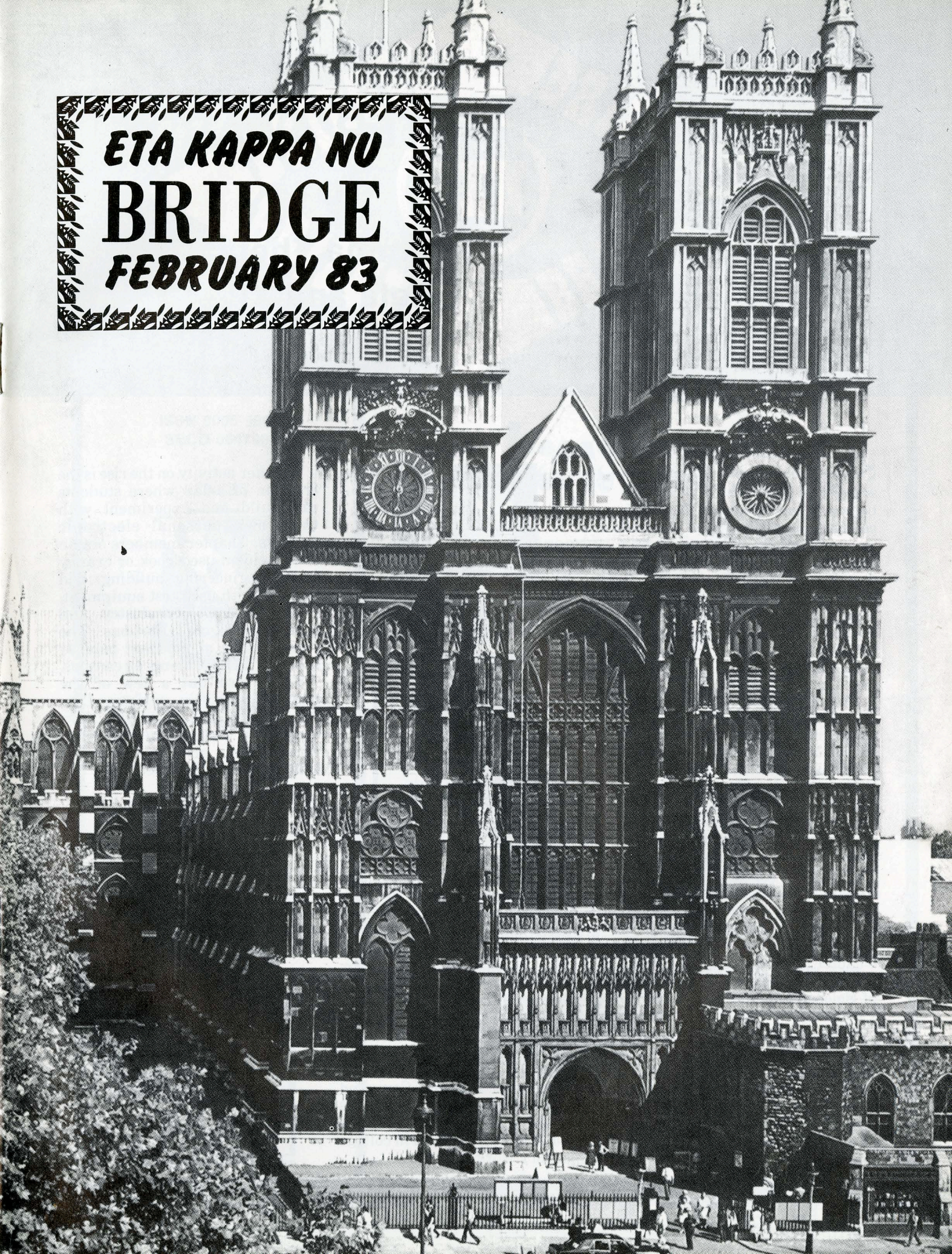
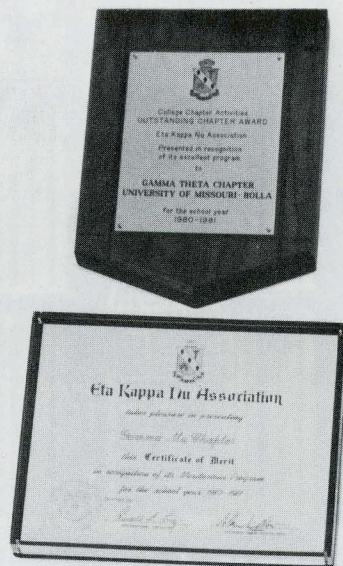


ETA KAPPA NU
BRIDGE
FEBRUARY 83





CHAPTER AWARDS to Gamma Theta Beta and Xi

Alan Lefkow, Chairman

Service to students, department, school and community has always been a mainstay of Eta Kappa Nu college chapters. Many chapters make an all-out effort in serving others. To recognize such efforts, Eta Kappa Nu, which is in the business of recognizing excellence, annually presents the Chapter-Activities Award to those chapters whose programs were judged outstanding.

For the year 1980-81 the Chapter-Activities Award Committee recognized six chapters for their outstanding programs. Foremost, and hence the National Winner, was Gamma Theta Chapter at the University of Missouri-Rolla. Honorable Mention went to Beta Chapter at Purdue University, and Xi Chapter at Auburn University. For meritorious programs, Certificates of Merit were awarded to Gamma Gamma Chapter at Clarkson College, Gamma Mu Chapter at Texas A&M University, and Rho Chapter at the University of Colorado.

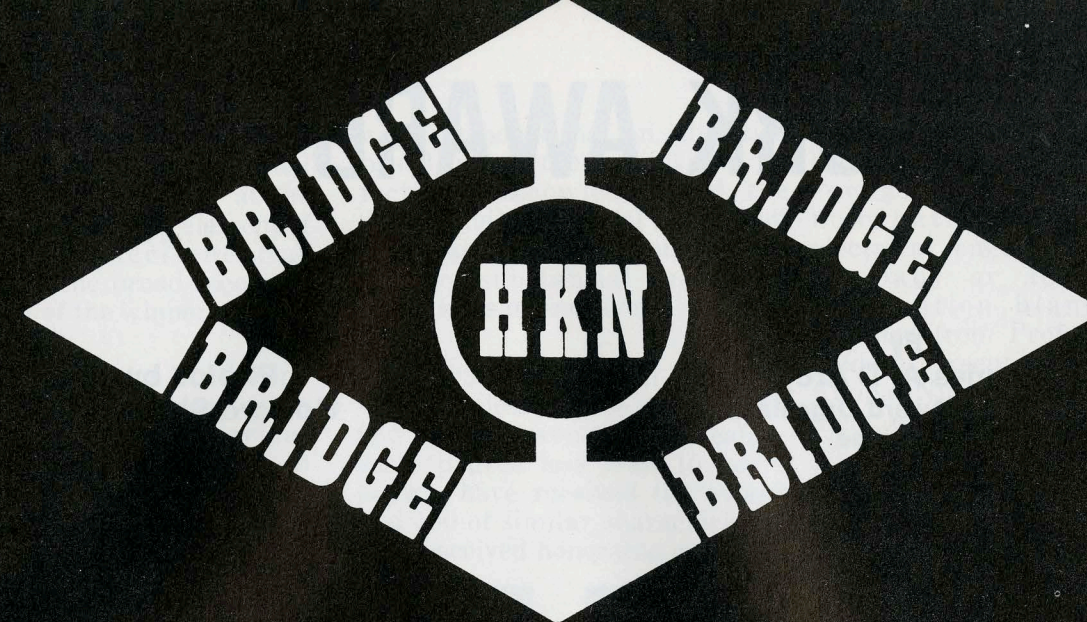
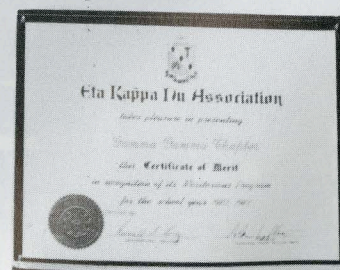
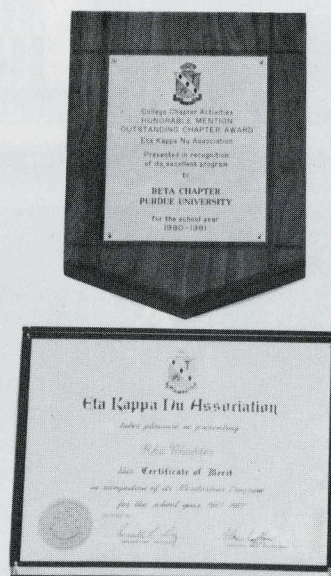
Competition was particularly keen for the 1980-81 academic year, with dozens of chapters submitting annual reports for consideration. Winners are selected on the basis of the nature, extent and depth of chapter programs, with emphasis given to

activities that benefit the E.E. department, school and community at large.

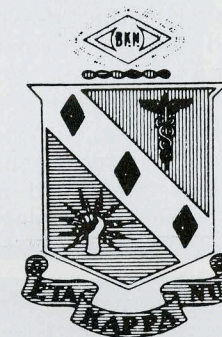
Although the scope of worthwhile chapter activities is both wide and diverse, certain activities are becoming increasingly popular. One such activity is organizing and printing resume books for use by industry recruiting college graduates. By selling the books for \$20 to \$50 a piece, chapters cover the cost of producing the books, as well as often raising chapter funds. Another popular book is an E.E. or computer lab manual. Compiled from notes, instruction manuals and hands-on experience, this book often fills a long-felt void in college laboratory work.

Another activity on the rise is the creation of a lab where students can build and experiment with their own personal electronic projects. Chapter members obtain some seldom-used nook or cranny in an engineering building, and stock it with used test equipment, parts donated by industry, and other useful contributions. The result is one of the most popular spots for E.E. students on campus.

These are but a few of the popular activities performed by Eta Kappa Nu chapters. New, creatively thought out activities will certainly arise in next year's Chapter Award competition.



ISSN 0006-9809
SECD 064700



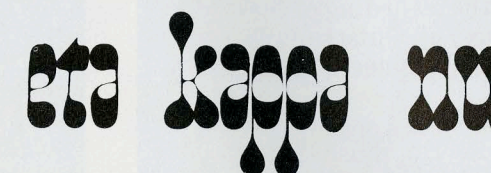
Editor and Business Manager
Paul K. Hudson

Contributing Editors

Marc Dodson
Larry Dwon
Lawrence Hamilton
Colleen Hamilton
Winston Kock
Alan Lefkow
Marcia Peterman
George Swenson
Howard Sheppard

OUR COVER

Westminster Abbey introduces our special Supplement starting on page 11.



Electrical Engineering Honor Society
February 1983, Vol. 79, No. 2

IN THIS ISSUE

Chapter Awards	2
New York Award Dinner	4
New Officers and Directors	7
The House that Edward Built	11
Lawrence Institute of Technology	20
Univ. of Colorado; at Colorado Springs	21
University of Nevada at Reno	22

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. 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.

NEW YORK AWARD DINNER

By
James A. D'Arcy
Chairman of Award Organization
Committee

Photos by
Howard Sheppard

On Monday evening, February 1, 1982, over one hundred members and guests gathered at the New York Statler Hotel in New York City to witness the awarding of the 1981 Recognition of Outstanding Young Electrical Engineers in the United States.

The winner was Dr. Tushar R. Gheewala of IBM Corp., Watson Research Center, Yorktown Heights, N.Y. Manager of the Exploratory Logic Group, Dr. Gheewala was honored for his outstanding contributions to the field of Josephson Logic Circuitry and for his involvement in civic and professional activities.

Honorable Mention was awarded to Dr. Thomas G. Wilson, Jr. and Dr. Won Tien Tsang. Dr. Wilson is Supervisor of the Low Power Custom Converter Group at Bell Laboratories, Whippany N.J. He was honored for his contributions to the field of Electric Power Conversion and for his involvement in church activities. Dr. Tsang is a Member of Technical Staff at Bell Laboratories, Murray Hill, N.J. He was honored for his contributions to the field of Semiconductor Laser Technology and for his cultural achievements.

The keynote speaker was Mr. James B. Owens, President-Elect

Toastmaster Irving Engelson holds large HKN trophy bowl. President Russell Lueg and Tushar R. Gheewala, the 1981 winner, look on.



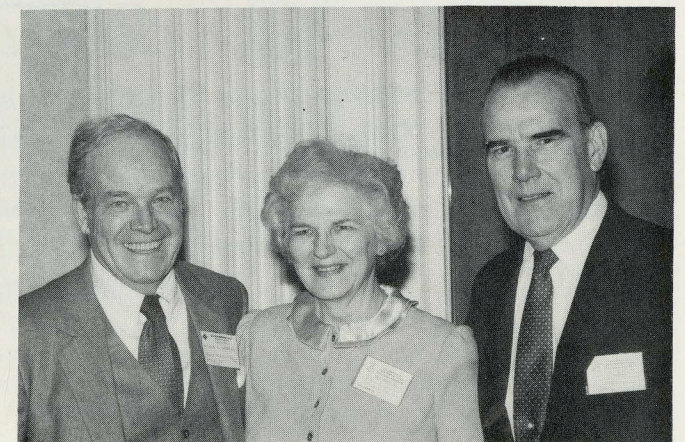
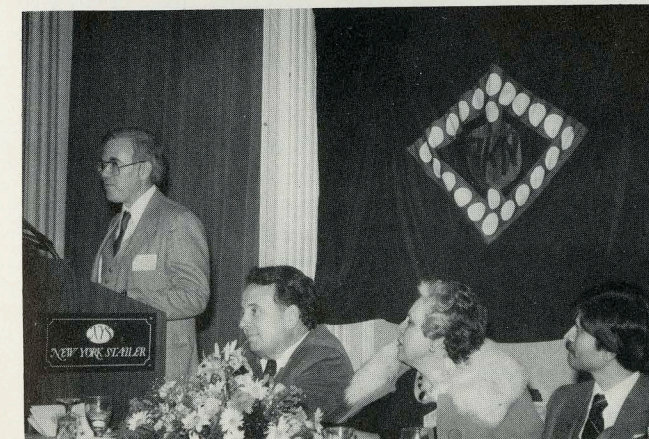
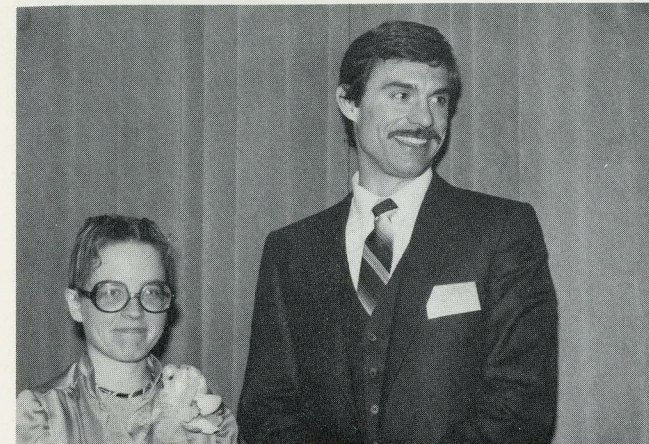
of IEEE, who spoke on Professional Excellence. He indicated that technical competence at the highest level is but one element of professional excellence, as evidenced by the broad-spectrum involvement of the winners in non-technical areas.

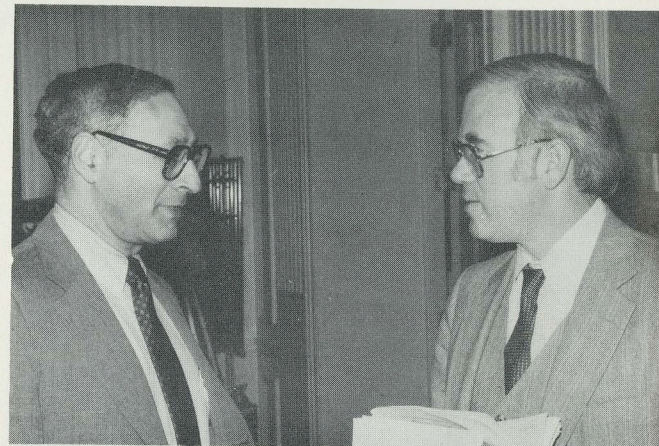
Initiated in 1936, the Eta Kappa Nu Recognition was created to "emphasize among electrical engineers that their service to mankind is manifested not only by achievements in purely technical pursuits but in a variety of other

ways. It holds that an education based upon the acquisition of technical knowledge and the development of logical methods of thinking should fit the engineer to achieve substantial success in many lines of endeavor."

Since 1936, 46 electrical engineers who were less than 35 years of age and who received their Baccalaureate degree less than 10 years before, have received the award and 100 of similar characteristics have received honorable mention.

You can assist Eta Kappa Nu in discovering other outstanding recognition candidates by nominating worthy young electrical engineers from your company or acquaintance. Nomination blanks can be obtained from Professor Paul K. Hudson, Executive Secretary, Eta Kappa Nu Association, Department of Electrical Engineering, University of Illinois, Urbana, Illinois, 61801. Nominations should be returned to him no later than June 30, each year.

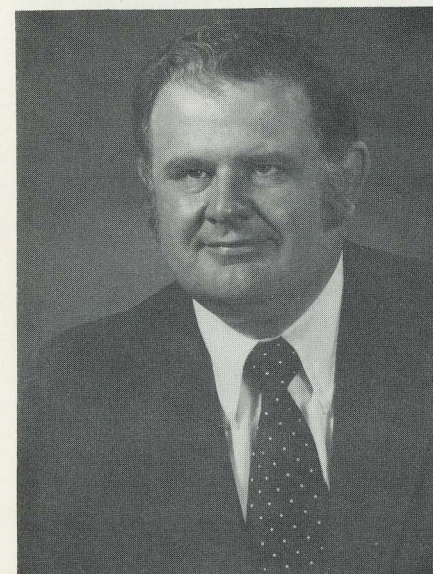




INVITATION

The Eta Kappa Nu Award Dinner in honor of the Outstanding Young Electrical Engineers of the United States will be held this year on Monday, April 18, 1983, at the New York Sheraton Hotel in New York City. All Eta Kappa Nu members and guests are invited. For tickets please contact Mr. Albert Fakheri, American Electric Power Co., 180 East Broad Street, Columbus, Ohio 43215. Phone 614-223-1045.

NEW OFFICERS AND DIRECTORS



J. Robert Betten
President

J. Robert Betten was born in Omaha, Nebraska on November 10, 1932. He attended public school there and was graduated from Omaha Technical High School in 1950. In 1950, he enrolled at Iowa State University and received the B.S. degree in Electrical Engineering in 1955. From 1955 to 1957 he served as lieutenant in the Army Signal Corps teaching radar and anti-aircraft fire control electronics. He worked as an electrical engineer for Convair Aircraft Company in the Advanced Electronics Systems Design Group from 1957 to 1958. He attended graduate school from 1958 until 1962, receiving the M.S. and Ph.D. degrees in Electrical Engineering from Iowa State University in 1959 and 1962 respectively. During the summers of 1960 and 1961 he returned to Convair in San Diego. In the fall of 1962 he joined the Electrical Engineering Department at the University of Missouri-Rolla (UMR) as an Associate

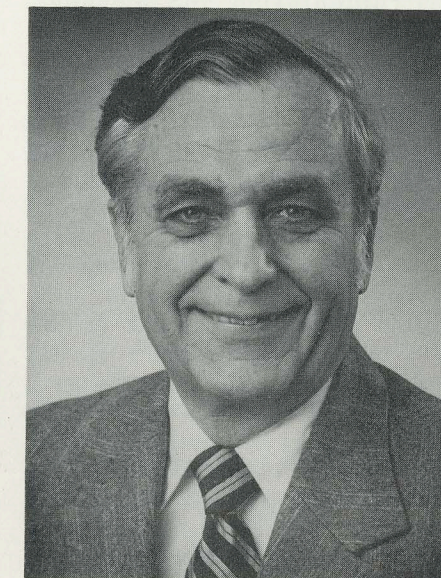
Professor. In 1964, he was promoted to the rank of Professor. From 1967 to 1978 he served as the Electrical Engineering Department Chairman. In September, 1978 he was appointed Director of the Electronics Research Center in the School of Engineering.

Dr. Betten has been involved in Public Service work in various technical professional societies at the national level. The following listing summarizes this activity: Member, Board of Directors, NEC (National Engineering Consortium, formerly National Electronic Conference, Inc.), 1972-Present; Chairman, IEEE MIDCON Technical Program Committee, 1979. Member, National Board of Directors, Eta Kappa Nu, 1976-78. Member, Organization Committee, IEEE MIDCON Conference, 1977-78. Chairman, Electrical Engineering Division, ASEE (American Society for Engineering Education), 1976-77. Vice Chairman, Electrical Engineering Division, ASEE, 1975-76. Secretary/Treasurer, Electrical Engineering Division, ASEE, 1974-75. President, NEC Corporation, 1972. Vice President, NEC Corporation, 1971. Chairman, IEEE Fall Electronics Conference, 1971. Secretary, NEC Corporation, 1970. Chairman, UMR/IEEE Mervin J. Kelley Communications Conference, 1970.

Paul B. Jacob, Jr.

Paul B. Jacob, Jr. received the B.S. degree in Electrical Engineering from Mississippi State University in 1944 and the M.S. degree in Electrical Engineering from Northwestern University in 1948.

From 1944-46 he was employed by Tennessee Eastman Corporation at Oak Ridge, Tennessee, where he was involved in uranium isotope separation research. When



Paul B. Jacob, Jr.
Vice-President

in Graduate School at Northwestern University, he held a graduate teaching assistantship at that institution. He also had brief summer employment in the High Voltage Laboratory at Westinghouse Electric Corporation. After returning to his Alma Mater, Mississippi State University, to begin his teaching career, he progressed through the ranks and in 1956 was promoted to Professor of Electrical Engineering and in 1962 became Associate Head of the Electrical Engineering Department.

His areas of prime interest are electric power systems and high voltage phenomena. He is Director of the High Voltage Research and Testing Laboratory at Mississippi State University, the largest facility of this type located at a U.S. academic institution. Through the utilization of this laboratory in a variety of industrial testing and research programs, Professor Jacob has served as consultant to a

number of electric utilities, manufacturers and industries. His publications include both reffered articles and proprietary documents. He serves as a committee participant in the preparation of several IEEE Standards and Guides for use in power system instrumentation and measurements.

Professor Jacob is a senior member of IEEE, Power Engineering Society, where he is active in the Power System Instrumentation and Measurements Committee, having served as Committee Secretary, Vice Chairman and Chairman and has participated in various sub-committee and task-force functions and assignments. He is a recipient of the Committee's Special Recognition Award. Presently, he represents the Power System Instrumentation and Measurements Committee as a member of the Long Range Planning Task Force of the Power Engineering Society, Technical Operations Department.

He is presently Vice Chairman of the Steering Committee of the Southwestern Electric Exchange Industry and Educator Group which is associated with the Southeastern Electric Exchange, an investor-owned electric utility regional association. He is one of the organizers and instructors in the annual two-week Modern Power System Analysis Short Course sponsored by the Exchange and taught each year at Auburn University.

He served as the organizing sponsor of the Gamma Omega Chapter at Mississippi State University and later as a member of the HKN National Board of Directors in 1962-63. He also holds membership in Tau Beta Pi, Phi Kappa Phi, Sigma Xi and Omicron Delta Kappa and is a Registered Professional Engineer.

In Starkville, Mississippi, he is a member of the First Baptist Church where he is a deacon and Sunday School teacher and is also a member and past president of the Rotary Club. His fraternity affiliation is Sigma Alpha Epsilon where he served on its National Board of Directors (1961-71)

including National President (1969-71).

He is listed in Who's Who in Technology Today (1980) and Who's Who in America.

His family consists of his wife, Mildred and two sons, Bill and Bernard, both of whom are married.



Donald Christiansen
Director

Donald Christiansen is a staff director of The Institute of Electrical and Electronics Engineers and editor and publisher of *IEEE Spectrum*. His engineering experience was gained at Philco Corporation and CBS Electronics. In 1961 he became solid-state editor for *Electronic Design*, and later, at McGraw-Hill, was editor-in-chief of *Electronics*. He joined the staff of IEEE in 1971

Mr. Christiansen was elected to HKN as an undergraduate at Cornell University, where he earned his B.E.E. in 1950. He is a member of the HKN Outstanding Young Electrical Engineer Award Organization Committee, and served as chairperson of that committee from 1975 to 1979.

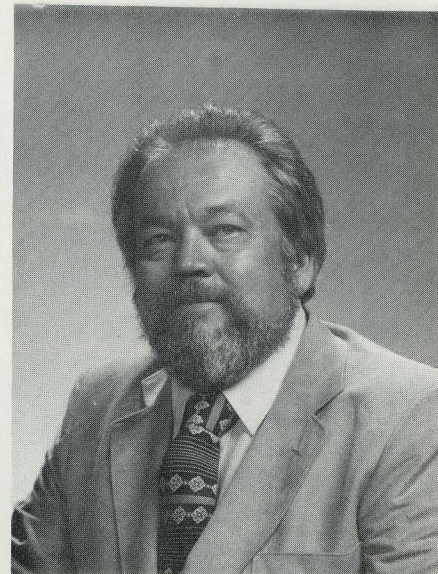
He is the author of numerous articles in the field of electronic devices and integrated circuits, and is the associate editor of the McGraw-Hill *Electronics Engineers' Handbook, Second Edition*.

He is a member of the New York Academy of Sciences, the Society for the History of Technology, the

Franklin Institute, the Antique Wireless Association, Mu Sigma Tau, and Sigma Delta Chi. He is also a registered professional engineer, and a member of the Union Internationale de la Presse Radiotechnique et Electronique, the National Press Club, the Cornell Society of Engineers, and the Cornell Club.

In 1980, he was presented the Triennial Culture Award of the Flanders Academy of Arts, Science, and Literature, along with a medal from the Netherlands Minister of Culture.

Mr. Christiansen was elected a Fellow of IEEE in 1980.



Robert Kennerknecht
Director

Mr. Kennerknecht is a Registered Electrical Engineer in the State of California. He received his B.S. Degree in Engineering from the University of California at Berkeley in 1959 and his M.S.E.E. Degree from the University of Southern California in 1963.

Mr. Kennerknecht's specialty is Control System Design and Analysis and System Modeling.

Mr. Kennerknecht's interest in Electrical Engineering began with the building of a VandeGraaff Generator for a St. Louis Science fair in 1949. From 1951 to 1955 he served as an Electronics Technician in the U.S. Navy servicing all the electronics equipment aboard the U.S.S. Buck DD 761.

His engineering career began at

Aerojet General in Azusa in 1959 where he designed space-borne electronics and servos for Electro-Optical Trackers.

Joining the staff of Consolidated Systems in Monrovia, CA in 1962 he designed electronics and developed control equations for Hydraulic, Pneumatic and Electro Mechanical Systems including one of the first digitally controlled image orthicon Satellite Trackers.

Since joining General Dynamics in 1963, he has performed analysis and design of seekers and autopilots for emerging programs. He was the prime control system designer of the power control and ships motion decoupling loops for Phalanx, the Navy's newest gun system.

Mr. Kennerknecht is also active in college recruiting and is a member of the General Dynamics Corp. Speakers Bureau and has given numerous talks at campuses around the country. Since 1965 he has taught in-plant courses in Control System Design and Analysis.

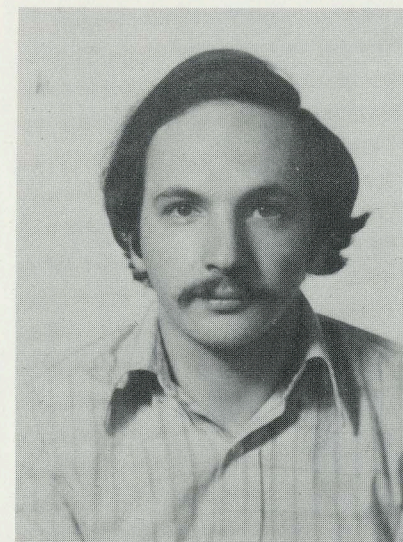
Mr. Kennerknecht joined the Electrical Engineering staff at California Polytechnic University in Pomona in 1975 and has taught a variety of undergraduate classes.

Mr. Kennerknecht was elected to the Mu Chapter of Eta Kappa Nu in 1957, and served as Vice President in 1958. He also served as Vice President of the California Alpha Chapter of Tau Beta Pi and as President of the Student Electrical Engineering Society while attending Berkeley.

He joined the Los Angeles Alumni Chapter of Eta Kappa Nu in 1959 and was elected President in 1972. In 1968 he became a part of the outstanding Electrical Engineering Student Award Committee and has continued to serve to the present time. As a member of the Chapter's Speakers Bureau he has given talks to many of the Student Chapters and High Schools in the L.A. area.

Paul Hagouel
Director

Paul Hagouel was born in Athens, Greece on March 16, 1950. He graduated from Anotolia College (a Greek-American High



School) in Thessaloniki in June 1968. He continued his studies in the United States where he graduated from New York University with the Bachelor of Engineering degree *summa cum laude* in Electrical Engineering in June 1972. During his Junior year he was elected to both Eta Kappa Nu and Tau Beta Pi and served as President of both in his senior year. He received the M.S.E.E. degree from New York University in 1973, and the Doctor of Philosophy degree in Engineering from the University of California at Berkeley in 1976.

He returned to Greece immediately after completion of his doctoral studies. He is a consulting technical, administrative and commercial manager at the S.A. Hagouel & Co. Graphic Arts Firm, and a partner in a building contracting firm. In addition he founded his own company (Optelec—Paul Hagouel Ph.D.) a Technical Consulting and Trading Company.

Dr. Hagouel teaches on an Adjunct basis at the Electrical Engineering department of the Aristotelian University of Thessaloniki. He teaches courses on ICs, Semiconductor Devices, and Advanced Topics in Physics. His main research interests are in Solid State Devices, VLSI, X-Ray Lithography, modeling of the above.

Dr. Hagouel is fluent in French. He is a member of IEEE and of the Technical Chamber of Greece. He is married and has one daughter.

THE ETA KAPPA NU COLLEGE OF BENEFACTORS

SUPREME BENEFACTOR

Edith Ann Koerner

Paul K. Hudson

HIGH BENEFACTOR

Norman R. Carson

Helene Koerner Gahlen

Lloyd Hunt

Fritz A. Koerner

BENEFACTOR

Marc Dodson

Frank B. Doyle

Larry Dwon

Irma Hanson

Fred Harrell

Edward Jordan

Omicron Chapter
(Univ. of Minnesota)

Eugene Mueser

Everitt S. Lee

Sydney R. Parker

Donald S. Pearson

Howard H. Sheppard

Alan R. Stoudinger

Joanne Waite



A Stranger At The Court Of Saint James

Part Six

The House That Edward Built

*The tumult and the shouting dies—
The Captains and the Kings depart—
Still stands Thine ancient sacrifice,
An humble and a contrite heart.
Lord God of Hosts, be with us yet,
Lest we forget—lest we forget.**

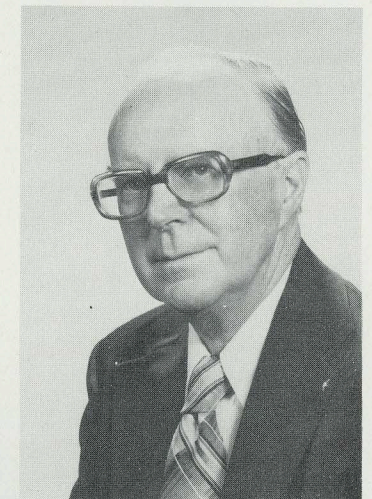
The best way to see a large and important place is to first take an escorted tour and then go back later on your own. The tour guide will show you most of the important things but he will assume that you will not want to look at them for more than a moment or think about them at all. Accordingly we bought a half-day tour of Westminster Abbey. They also threw in a ride around town to make the package seem a lot for the money. Later we went back on our own and did it right, or at least better.

The guide was very mechanical, "Here is this and there is that and over there somewhere is something you should see." He could have done it in his sleep. In point of fact I think he was asleep.

As we enter the west main door, the first thing we see is the floor plaque in honor of Winston Churchill. There is also a statue of him over to the right. But Churchill was not buried in the Abbey at his own request. He said, with his usual humor that, given the choice, he would not have agreed to have tea with most of the people buried there. Many other people are honored with plaques and so just because we see a marker with a name on it we must not conclude that the person is interred there.

***From *Recessional*, Kipling's sermon-poem
for the British Empire.**

The Nave showing the memorial to Winston Churchill and the Tomb of the Unknown Warrior.



by **PAUL K. HUDSON**
Editor — Bridge

The next item of interest is just beyond the Churchill plaque, and is the grave of the Unknown Warrior. I realized that the United States and some other contries had made a mistake in this matter and that England had done it right. It is not known what branch of the service the warrier served in, and that is fair play. Why should the Navy, Air Force, Marines, and Coast Guard for that matter, get left out? The plaque is surrounded by a garland of red *Flanders poppies*.

Over in the left aisle I saw a wall plaque with the name Ben Johnson. I asked if the great man was buried in the wall.

"No, you are standing on him," came the reply.

Next two pages — The Choir. Until the middle of the 16th Century Westminster Abbey was a Benedictine monastery, and the monks sang their daily services in the enclosed Choir. This tradition continues in the present collegiate Church.





I looked down and found that I was standing on a small square unmarked floor stone. The guide saw my surprise and explained, "When you are selected to be buried in the Abbey, you still must pay all the burial expenses, including the floor stone. Ben told them that he wanted to be buried as cheaply as possible so they buried him standing up."

"I think the stone mason goofed," I said. "Johnson is not spelled right. There is no 'h' in his name."

"That is right. His name appears at four places in the Abbey and it is misspelled in all of them."

"Why?"

"Who knows?"

At the back or eastern end of the Abbey there formerly was a Lady Chapel built by Henry III. It was demolished by Henry VII to make room for his rich and splendid Chapel to the Virgin. Henry VII, founder of the House of Tudor, envisioned it as a magnificent place of burial for himself and his family. With the exception of Henry VIII who is buried at Windsor Castle, all of the Tudors lie within this beautiful Chapel which has been described as the most wonderful in all of Christendom. It was built in the years 1503-19. The Chapel is used for the Installation of Knights of the Most Honorable Order of the Bath and some of their banners can be seen hanging over the stalls.

As I stood alone in that lovely place, surrounded by the Royal Tombs of ages past, I thought of the song from *Kismet* that begins:

Princes come
Princes go
With only an hour of Pomp and Show
Yet we know
Princes come
And over the silent sands of Time
They go.

For me, the most interesting tomb in the Henry VII Chapel is the one of Queen Elizabeth I and her older half-sister Mary — Bloody Mary Tudor, as she is known in History. Mary was the daughter of Henry VIII and his first wife, Catherine of Aragon. Mary was all Catherine and no Henry. To be more exact, she was all Isabella, her maternal grandmother who established the Spanish Inquisition. She hated her half-sister Elizabeth and on one occasion had her jailed in the Tower of London. She was married for a while to Philip II of Spain — the man who later

The Chapel of King Henry VII, which is the Lady Chapel of the Abbey. The banners of the Knights of the Bath hang above the stalls.

mounted the Spanish Armada against Elizabeth. He lived with Mary for a while in England until he decided that her health was too poor for her to become a mother, and then went back to Spain. When Mary died, Elizabeth became Queen. She was the daughter of Henry VIII and his second wife Ann Boleyn.

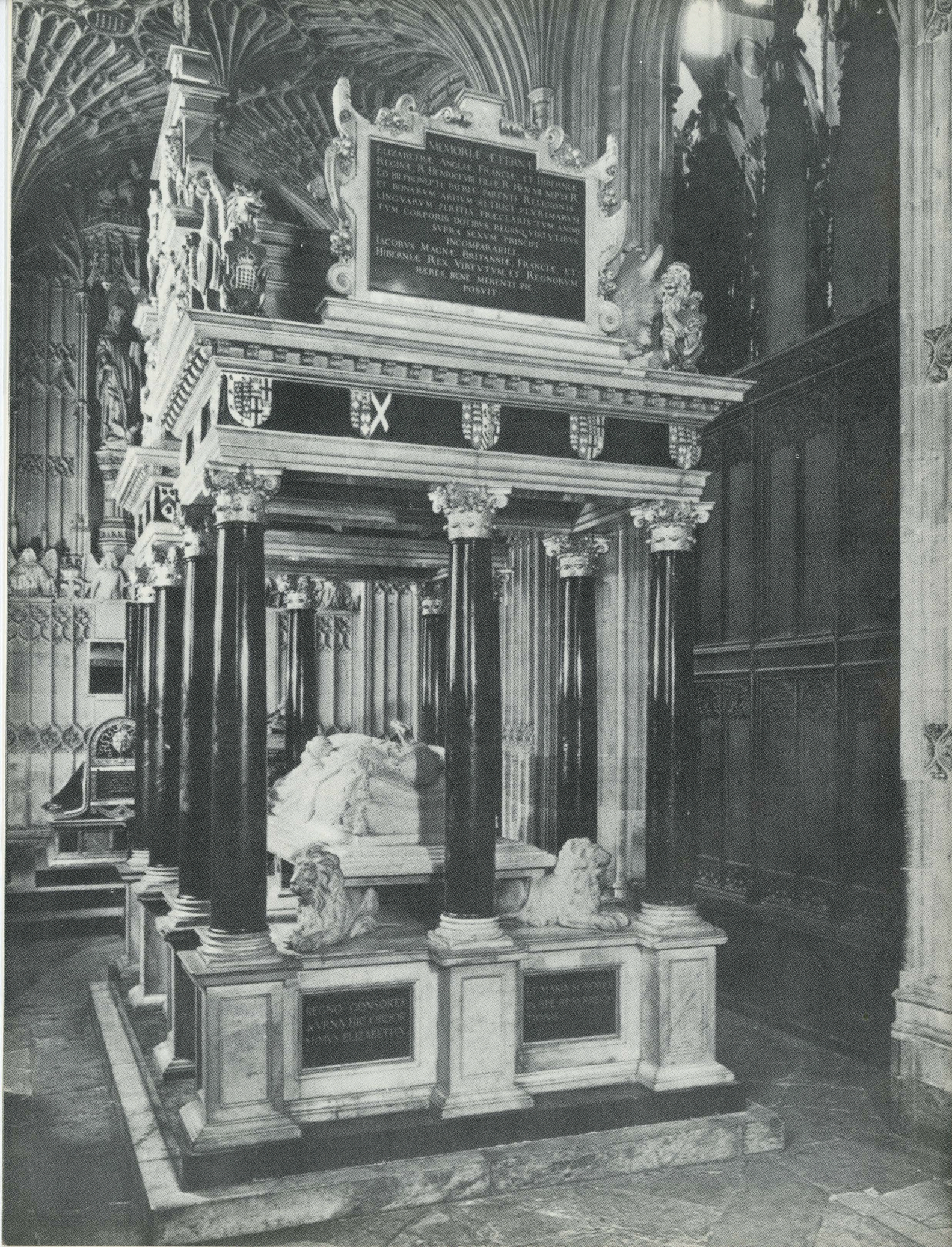
Elizabeth was all Henry and no Ann — a real roughneck. Spenser was nuts when he wrote the *Fairie Queen*. We know her completely when we read the speech she made on the Channel Coast as the Armada approached. "I am but a mere woman but I am going to stand here and fight. Any cowards may run away if you wish, but no army is going to land on this shore except over my dead body, etc." That was the Queen of the realm talking and she meant it.

So it was a great surprise to me that the two sisters were buried together, and a greater surprise that only the stone effigy of Elizabeth is above the tomb. Mary buried under the effigy of Elizabeth???? My, oh my!!!! After all these years I think I could still hear her muttering, "Get me out of here, right now, get me away from her." Then I could hear Elizabeth crying out "God's death, who put her in here with me?"

The lovely and thought-provoking Royal Air Force Chapel is in a place of honor, occupying the central apse at the eastern end of the Henry VII Chapel. Not only the English, but all the peoples of the free world should stand in tearful reverence in this beautiful memorial. It commemorates the men of the Royal Air Force who were killed or who died of their wounds during the Battle of Britain — July to October 1940. The principal feature of the memorial is the stained and painted window. In the lower lights of the window are reproductions of the badges of the 63 squadrons of the Royal Air Force that took part in the historic battle. In four panels are shown visions symbolizing the Redemption.

The figures of pilots can be seen in the Redemption windows as can the Royal Arms and the flags of the Dominions, the United States, Belgium, Czechoslovakia and Poland, all of whose nationals had flown with the Royal Air Force during the battle.

Behind the High Altar is the most important tomb in the Abbey — that of King Edward the Confessor. He was responsible for the building, over the last fifteen years of his life, of the first version of this Abbey. It was consecrated only a few days before his death on January 5th, 1066. He was known as *The Confessor* because of the pious life he led and was canonized into Sainthood in 1163. His tomb became a pilgrim shrine. Edward did not become a Saint because of his talent in the art of Kinging, which was minimal. He did not care much for the English people and selected most of his friends in Normandy. The sorrow of his last great blunder in leadership, it is said, led to his death. I wondered what modern English people thought of him so I said to the guide,



"What did he do?"

"He was a Saint."

"Yes, I know, but did he lead any armies to victory or anything like that?"

No, he was a Saint."

"Was he a man of the sea and captured enemy ships or something?"

"No, he was a Saint."

"Well, did he write any books or poetry, or do any translations?"

"No, no, no, he didn't do anything at all, he was a Saint."

I could not hold back a laugh and the guide was not pleased by it. I am sure he thought I was laughing at him instead of the idea that you do not have to do anything to be a Saint — that when you are born you come complete with a diploma and a set of instructions for people to follow.

Near Edward's tomb is kept the Coronation Chair. It was not made originally for Coronations. Edward I, known as *the hammer of the Scots* had the chair made to enclose the Stone of Scone which he had captured from the Scots in 1297. There is a tradition that it is the stone on which Jacob laid his head at Bethel (Genesis XXVIII) but as for facts, this stone was deposited in the monastery of Scone in Scotland by King Kenneth I, in the year 846 and the kings of Scotland were crowned on it until 1292.

For Coronation ceremonies the Chair, with the Stone of Scone, are taken from Saint Edward's Chapel to the Sanctuary and on them have been crowned all of the Sovereigns of England since 1308, with the exceptions of Edward V (1483) and Edward VIII (1936) who were never crowned.

The chair does not look the part, but is more or less a mess. This was caused by the fact that it is so old and unrefinished and because that prior to the 18th century the Chair was unprotected. Visitors were allowed to sit on it and (you guessed it) often carved their names or initials thereon. Only once since it was made has the Coronation Chair left the Abbey on a State occasion. That was during the Commonwealth when Oliver Cromwell had it taken to Westminster Hall for his installation as Lord Protector.

The tomb of Queens Elizabeth I and Mary Tudor. The tomb was erected by King James I in 1606. The Latin inscription reads: *Consorts both in throne and grave, here sleep we two sisters, Elizabeth and Mary, in the hope of one resurrection.*

The eastern side of the South Transept is called Poet's Corner. Some are buried there and others have memorial plaques in the floor or walls. There are a number of statues along the walls. Geoffrey Chaucer, author of *Canterbury Tales* and perhaps England's greatest poet after Shakespeare, died in 1400 and for 150 years his memorial was a leaden plaque, inscribed with his epitaph, which hung from a pillar. It was not until 1555 that his present tomb was erected. Near to Chaucer's tomb is a fine bust of Henry Wadsworth Longfellow, presented by his English admirers. He is, I think, the only American poet that is honored in the Poet's Corner. There are busts or plaques for Ben Johnson, Shakespeare, Milton, Burns, Tennyson, and many others. Among those buried in the Corner are Dryden, Dickens, Samuel Johnson, Kipling and Hardy. They are all honored for their talented expressions and not their personal lives — otherwise a couple of them would not be there — especially Burns, the Ayrshire stud.

Two of the floor plaques caught my eye. One was over the grave of Robert Browning. It was a *brown stone* and I thought that was good theater. However, if I had my way it is Elizabeth who would be buried in Westminster Abbey and Robert would be buried in her grave at Florence. Her book *Aurora Leigh* is better than all of his works combined.

The other plaque was a nice new one, only weeks old. The shine was still on it. It was for Mary Ann Evans Cross (George Eliot). But if I remember right, they left off the Cross. It might have been the Evans, but I think it was the Cross. Of course she married J.W. Cross only two years before she died, but she has always been known in America by her full married name. As I stood and looked at the plaque I remembered that the last words of her great novel *The Mill on the Floss* were: *In death they were not divided* — talking about Tom and Maggie Tulliver. But in death Mary Ann's name got divided, at least in Westminster Abbey.

I asked the guide if he was going to take us to the Museum in the undercroft.

"No."

"Why not?"

"There is nothing to see there."

"If I go on my own, how do I get there?"

"You go outside in the back someplace and find some stairs."

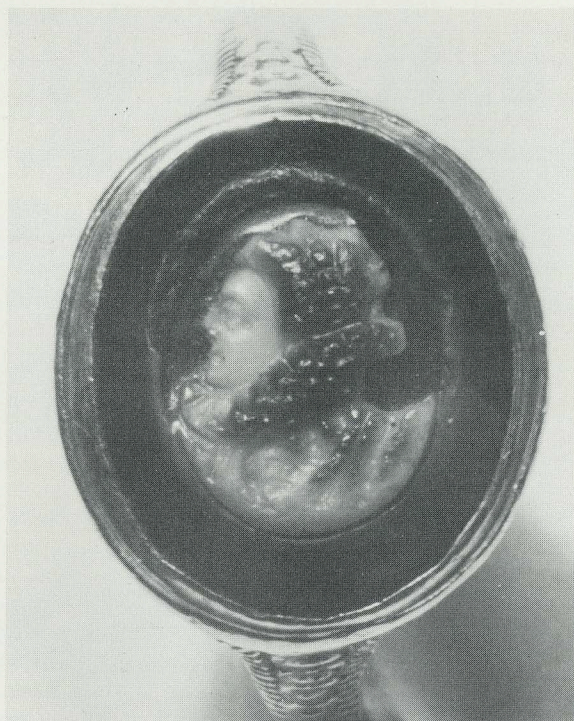
It was clear that he had never been there. This professional guide of Westminster had never seen some of the most interesting things in the Abbey.

The next day we were back on our own and the first place we went was to the Museum. I would never have

been willing to leave England without going there because I just had to see the Essex Ring for myself. The story involves Queen Elizabeth I, the gal who is buried upstairs in the Henry VII Chapel, and Robert Devereux, The Earl of Essex.

Queen Elizabeth never married. Professional historians do not agree on the reason for that. Some say that she was not physically able to be a wife. Others say that, because she was a roughneck, she was not mentally capable of being a wife. Still others say that she never found anyone she liked well enough to marry. I do not agree with any of this. It is true that she was a roughneck when it came to matters of State, but otherwise, in a man's arms, she was a sweet and warm little kitten. It is a matter of record that she hugged and kissed guys in public, which is saying a lot for a Queen of England. Also, she dearly loved Robert Devereux and kept him in her rooms all night, many a night. Historians say that they were playing Wist. More exactly, they were just playing. However, she never lost her head and, of that, we can be certain. Robert had a disease so serious that it finally cooked his brains and he became irrational. Elizabeth never contracted it. But that is not the reason she did not want to marry him — she very likely did not know about it. She refused to marry him because he was headstrong and mauch and would push her for power. She enjoyed being Queen and did not want to share any part of it. The other suitors were mainly sissies. She wanted a man, not a lap-dog. There is another possible reason that is never mentioned by historians, and might be the most important of all. When a Head of State got married in those days, a government council — of men — had to be present in the bedroom on the marriage night, so that they could proclaim the next day that a marriage had been consummated. Thus, in the future, the Head of State could not claim that there was never a marriage, and thus get a divorce. Elizabeth definitely was not the girl who would have put up with that arrangement. So — there was nothing to do but stay single.

One night when Elizabeth was entertaining Robert in her rooms, she gave him one of her rings and told him that if he ever got himself into any serious trouble, he should send her the ring (so that she would know the message was true) and she would come to where he was and get him out of the trouble. Later Robert did get himself into serious trouble — very serious. When he finally realized that she was not going to marry him (and his brains were pretty well gone) he started an uprising against her. She captured him and threw him in the Tower. The night before he was to be executed, he gave the ring to a guard and told him to take it to the Queen. But there was a problem with that. When the guard looked at the ring and saw the value of it, he just put it into his pocket and never took it to the Queen. Robert was executed the next morning. The ring is now displayed in the undercroft museum, and I so much wanted to see it. There were thousands of people upstairs in the Abbey, but only about a half-dozen in the museum. A



The ring that Queen Elizabeth I gave to the Earl of Essex. (Copyright — Used with permission of the Dean and Chapter of Westminster.)

photograph of the ring, supplied to us by the Dean of the Abbey, is shown.

After we came up from the Museum we were walking in the Cloisters and heard some organ music and singing coming from the Abbey. I opened a side door of the Abbey and looked in. There was a guard standing there in a beautiful red uniform.

"May we come in?" I asked.

"Yes certainly, there are a few chairs right over there."

I was surprised and pleased at what I saw. There was some kind of an important service going on. Thousands of people were sitting in the chairs of the sanctuary and thousands more were roped off at the back to prevent them from coming in and disturbing the service. But I had just drifted in like I owned the place and was going to show up whenever I decided to get ready. How I got by with that was because I had come in the door where the Dean, Canons, Dignitaries, Choirs, and other performers came in and went out.

I wanted to know what was going on so I did not sit down but just stood there with the Guard asking questions. What service is this? What are they doing now? What does that mean? Who are those people?

The Guard was very friendly and answered all my questions. He knew that I was no one important and would have been justified in saying, "Quiet down or get out of here," but he did not do that. He seemed to be pleased that I was showing so much interest and enjoying it so much.

What I had accidentally walked into was one of the three important annual services of the Abbey. They are held at Christmas, Easter and the fifth of July. Today was the fifth of July but I do not know why that is such an important date. The service was called FESTIVAL EVENSONG AT SAINT PETER-SIDE. The Dean of the Abbey, Canons, Choirs and other performers were in colorful robes, and at one point they arose and paraded the Abbey, carrying huge candlesticks, with lighted candles, banners, etc. It was a very beautiful and inspiring thing to see. I felt like I was viewing a parade of the Middle Ages, and I suppose I was.

After the ceremony was over I walked up to a man in a very colorful red costume and started asking more questions. He was not a Canon, but someone in high authority. He was very friendly, cheerful, intelligent and witty. Every time I asked a question a big happy smile would breakout on his face. He was very

pleased to be alive, pleased to know me, pleased that I had asked the question, pleased that there was a Westminster Abbey, and pleased that there was an England. What a joy he was to know.

I said, "How do you decide who gets buried here?"

He gave me his happy, mischievous smile and said, "Whenever a place in the floor wears out we just dash out and find someone with enough money to buy us a nice new floor-stone."

"You will have to be careful not to get stuck with another Ben Jonson."

"Yes, we must look in their pocketbooks first."

"Is the story of the Essex Ring true in all respects?"

This time he winked at me as he did his smile routine and said, "Whichever way you want it, that is the way it is. Just fix up the story in the way you will enjoy it most and I will swear to it."

I wish he could come to visit me when I get sick — he could make me well faster than any of the doctors.

CHAPTERS

GAMMA MU CHAPTER, Texas A&M University—The Gamma Mu Chapter held five business meetings this spring, two of which were followed by engineering seminars open to all electrical engineering students. Kevin Gourley, a master's degree student, presented a progress report on his particular project of interest "Computer Controlled Raster Scanning Laser Mask Generation for I.C.'s." Dr. N.C. Griswold, the Gamma Mu Chapter faculty advisor, spoke on the "Application of Target Recognition in Robotics." The election of John Bradbury as Texas A&M University's outstanding senior electrical engineer for the National Award Nominations took place early in the semester. Dr. John Fleming was selected as outstanding professor of the year at the same meeting.

The Gamma Mu Chapter co-sponsored an E.E. student-faculty picnic with Texas A&M's student branch of I.E.E.E. The picnic was highlighted by the traditional student-faculty softball game. On April 30th, twenty-one new members were inducted into Eta Kappa Nu. After the initiation ceremony, Dr. Griswold presented plaques to Lisa Stanley and Robert Setliff for their outstanding

participation as active members. The newly instituted outstanding active member award recognizes those members who participated in HKN activities far beyond what was required of them. Once again, our semester ended successfully with the traditional initiation barbeque the night of the initiation ceremony. *by Steven R. Traylor*

ZETA OMICRON CHAPTER, West Virginia Institute of Technology—The Zeta Omicron Chapter at West Virginia Institute of Technology sold electronic components to the junior and senior electrical engineering students for various required analog and digital experiments. Profits from the sales were deposited into an EE Development Fund for the use of buying equipment for the EE Department. Most of the components were bought in volume at discount prices and the savings was passed on to the students at usually less than single component cost.

DELTA THETA CHAPTER, Pratt Institute—On April 3, our chapter held an Easter party for the children in the pediatrics ward at the Cumberland Hospital near our school. We distributed balloons and assorted candies. Also, two of our chapter members provided entertainment for

the children. Mike Buopane, our chapter secretary, performed a magnificent magic show that stunned the audience. And Robert Maffia, a chapter member, handed out toys, skating passes, and just plain happiness to the children in the ward. Even though it was raining outside, just seeing these children in laughter made it seem like a warm summer's day.

Several weeks later, we received a letter from the hospital thanking us for the Easter party. It felt so good to have given a little of ourselves and know that it was appreciated. We were deeply touched by this sentiment. *by Yui K. Lung*

BETA ETA CHAPTER, North Carolina State University—This semester's activities included the usual new member selection and election activities. In addition there was a banquet held following new-member induction for HKN members, their guests, and the HKN faculty advisor. Service projects this semester included providing manpower for a University sponsored engineering exposition held at a local shopping mall and setting up and assisting with the Electrical Engineering Department's graduation ceremony.

Lawrence Institute of Technology

The Theta Upsilon Chapter of Eta Kappa Nu was installed at Lawrence Institute of Technology in Southfield, Michigan on January 16, 1982, with the initiation of forty-eight Charter Members. Among these were the founding officers, Eric Schaefer, Al Haase, Thomas Tench, Mark Pikula, David Girouard, David Scarchilli, Brian Daugherty, Jeffrey Bertoia, and Steven DeGroote.

Faculty, family and friends were present at the installation ceremony, which was conducted by Prof. Alan Stoudinger of Tri-State University. Lawrence Institute of Technology faculty who also participated in installation were Prof. Richard S. Maslowski, Robert D. Chute, Douglas Hamburg, and Dale McDaniel.

Professor Alan Stoudinger, Eric Schaefer and Professor Richard Maslowski



A banquet was held following the initiation ceremony. Banquet speakers included the initiation team, the past President of the Chapter, Eric Schaefer, and Richard Marburger, President and Chief Administrative Officer of Lawrence Institute of Technology. Good food and good fellowship were enjoyed by all present.

The formation of the Theta Upsilon Chapter coincided with the 50th Anniversary of Lawrence Tech. The new members hope to have the Chapter grow as a professional organization as the college grows, exemplified by the Capital Campaign Program currently under way.

The officers of this new Chapter are Michael Miotto, President; John Jankens, Vice-President; Jeffrey Molner, Secretary; and Thomas Kees, Treasurer.

CHAPTERS Cont.

GAMMA ALPHA CHAPTER, Manhattan College—In March we initiated the new members of HKN and held a "smoker," both of which were a great success. In early April we held the annual HKN dinner for all members and faculty; celebrating and wishing future success to Br. Stewart, who retired after 27 years of loyal service to HKN. We next held a T-shirt drive and a class evaluation for next year's senior electives. Once again both proved to be quite successful. *by John Santamaria*

BETA IOTA CHAPTER, The University of Iowa—This semester the Beta Iota Chapter at the University of Iowa established a weekly "open lab" to be used by students for independent design projects. Several students took advantage of this opportunity. The Chapter also organized the selection committee for the Edwin B. Kurtz Award, given annually by our Chapter to the most outstanding E.E. Senior. This year's recipient was Elizabeth Ericksen. *by Judson V. Spittler*

EPSILON TAU CHAPTER, University of California—After a year of inactivity, we at Epsilon Tau Chapter began anew by electing two new officers for the 1981-82 school year: Allen Vawter and Janell Kornfeind. Through their efforts, an initiation ceremony took place in February 1982 enacting twenty new members. After the initiation, biweekly meetings were established and new officers were elected on April 8, 1982. The main focus of our energy has been the enlargement and strengthening of our Chapter. Thus, plans for an early fall 1982 initiation are in progress. Also, efforts were made to influence the selection of permanent professors for core EE courses over visiting professors. In addition, methods of altering an inadequate pre-enrollment system were discussed and presented to the Electrical Engineering Department. *by Denise Reagan*

EPSILON PHI CHAPTER, California Polytechnic State University—This year was a very productive year for the Epsilon Phi Chapter. We had several activities that were rewarding experiences.

During this school year, we initiated 86 new members into our chapter. This has been the greatest increase in membership since Epsilon Phi was

organized, and we are proud to have had over one hundred active members this year.

We have participated in several community service activities. Our initiates helped to construct a building site for Casa de Vida—a local organization that assists the handicapped. Others participated in a blood drive in San Luis Obispo.

This year our chapter published its first annual resume book. It has aided several industries in locating prospective employees, and proceeds from its sale helped to finance other activities.

Other activities rounded out the year. We had a car-wash to raise funds. We also had several softball games and picnics to keep our prospective engineers in good shape. Finally, we finished our year with a banquet at Trader Nick's, a local restaurant. At our banquet we recognized our new initiates and installed new officers for the coming year.

Our new officers have hopes for a year that will be just as productive as the last, and with such a large membership, their goals should be readily achieved. *by Anthony Triana*

EPSILON RHO CHAPTER, Tennessee Technological University—The Tennessee Technological University Epsilon Rho Chapter was involved in a number of activities during this past year. The chapter membership grew significantly with forty-seven new members being initiated during fall and spring quarters. A TVA seminar was sponsored in November, in which lectures were conducted on "Computers and Communication Systems" by professionals from the Technical Service Branch of the Chattanooga facility. A racquetball tournament was also held in the fall with trophies being presented to the winners. During the winter quarter, the chapter worked with other engineering disciplines to set up Engineer's Day exhibits and tours for high school students interested in attending Tennessee Technological. Spring quarter, the chapter along with the IEEE held a picnic at a local country club in order for students and faculty to become more acquainted. The year ended with new officers being elected for the 1982-83 year. Best wishes for an even more successful year. *by Mark Daniel*

University of Colorado at Colorado Springs

The Theta Chi Chapter of Eta Kappa Nu was installed at the University of Colorado at Colorado Springs on April 23rd, 1982. The installation was performed by International Director Harold Knudsen, Past International Director Joanne Waite, Professor Edward Bauman, the Faculty Advisor of the new Chapter, and Professor Richard Sincovec, the Chairman of the electrical engineering department.

The students initiated at this meeting were Bijan Akradi, Stephen C. Berthe, Raymond F. Biedronski, Charles W. Chambon, Dante C. DeMio, Mark H. Hellsbusch, Brian Higgins, Jamshid GolabiKhoozani, James R. Long, Colleen M. McLaughlin, Michele K.M. Reza, Steven L. Rogers, Gary B. Simmons, Randy W. Smith, Mark B.

Stephens, George Whitesell, Jr., and Stephen S. Zanowick.

Other students who joined and were initiated later are Debra S. Johnson, Jong Koo Kim, John C. Lyle, and Gary Wetlaufer.

Robert McCabe and Donald Logelin have also joined but as of yet have not been initiated.

Chancellor Schwartz and Vice-Chancellor Sherman attended the Installation. Professor Knudsen presented the Charter to them so that they in turn could present it to the Chapter Officers.

The speaker for the event was John Jackson, who spoke on his work on the Shroud of Turin. The installation, initiation, and the evening events were done in a manner to be a credit to HKN.

Professor Edward Bauman, Faculty Advisor; Professor Harold Knudsen, International Director of HKN; UCCS Vice Chancellor Jack Sherman; UCCS Chancellor Don Schwartz





Top: Marc Dodson and Bruce Johnson

Center: Johnson, Nolte and Dodson

Bottom: Dodson and Dean Breese

University of Nevada at Reno

The University of Nevada, Reno is a new member of the Eta Kappa Nu family. The charter was accepted by Dr. Charles Breese, Dean, College of Engineering, thus establishing the Theta Psi Chapter on April 15, 1982, at the 118-year-old land grant university. This culminated a year of effort started by Dr. Donald K. Fronek, Associate Professor, and Marcus D. Dodson, Past President, with most of the efforts of a group headed by Dr. Bruce Johnson, Chairman, Electrical Engineering Department and Bill Nolte, Charter President of Theta Psi. The initiation and charter presentation ceremony was held at the Faculty Club and was attended by faculty, candidates, family and friends.

In his presentation of the charter to Dean Breese, Dodson said, "In my career I have had the opportunity to work with several engineers from the University of Nevada, Reno, and have found them, as a group, to be among the best prepared in the fundamentals of problem solving. I have the highest respect for your University."

Dr. Breese accepted the charter and said, "I am pleased to add Eta Kappa Nu to the honor societies represented here at the University of Nevada, Reno, and we will live up to the qualifications outlined in the initiation ceremony."

MERRY MOMENTS WITH MARCIA

BUYER BEWARE—I heard a butcher training a new clerk and it went something like this: "If somebody comes in and asks the price of two pork chops, you say, 'Five dollars.' Then you watch them very carefully—and if they don't wince, you say, 'And ninety-five cents.' Then you watch them even more carefully and if they still don't wince, you say, 'Each!'"

One day as I sat musing, sad and lonely, without a friend in the world, a voice within me seemed to say, "Cheer up, things could be worse." So I cheered up and sure enough, things got worse.

A careless word may kindle strife.

A cruel word may wreck a life;

A bitter word may hate instill;

A brutal word may smite and kill.

A gracious word may smooth the way;

A joyous word may light the day.

A timely word may lessen stress;

A loving word may heal and bless.

Our unabashed dictionary defines **beer baron** as a malty millionaire.

The teller had just been robbed for the third time by the same man, and the police officer was asking if he had noticed anything specific about the criminal.

"Yes," said the teller, "he seems to be better dressed each time."



CRITICS

The galleries are full of critics. They play no ball. They fight no fights. They make no mistakes because they attempt nothing.

Down in the arena are the doers. They make mistakes because they attempt many things.

Ford forgot to put a reverse gear in his first automobile. Edison spent two million dollars on an invention which proved of little value. They made mistakes because they attempted great things.

DO-IT-YOURSELF—A catalog "do-it-yourself" firm received the following letter from one of its customers:

"I built a birdhouse according to your stupid plans, and not only is it much too big, it keeps blowing out of the tree. Signed, Unhappy."

The firm replied: "Dear Unhappy: We're sorry about the mix-up. We accidentally sent you a sailboat blueprint. But if you think you are unhappy, you should read the letter from the guy who came in last in the Yacht Club regatta in a leaky birdhouse."

Synonym—a word you use in place of a word you can't spell.

I'm sure you've heard of the dentist who refused to make an emergency appointment with one of his patients because of a busy afternoon.

"You know I have 18 cavities to fill," he said, as he picked up his golf bag and hurriedly left his office.

A modern-day Rip Van Winkle slept for 20 years. Upon awaking he immediately called his broker.

"What's the stock market done the past 20 years?" he inquired.

With the aid of a computer his broker soon was able to report that his 100 shares of A.T. & T. were worth \$9.5 million, his 100 shares of General Motors worth \$7.9 million, and his oil holding had increased to \$19 million.

"Great!" Rip exclaimed, "I'm rich!"

At which point the telephone operator interrupted and said, "Your three minutes are up, sir. Would you please deposit a million dollars?"

by **MARCIA PETERMAN**

KAPPA CHAPTER, Cornell University—This past spring semester has seen the Kappa Chapter actively involved in a couple new projects, as well as continuing with the more traditional events. We again assisted our IEEE branch in organizing the EE Banquet, and we conducted the end-of-semester course surveys. Kappa's new activities include a tutoring program, staffed by HKN members. We also helped organize the Engineers' Week Exposition, which was revived at Cornell this year after a 20-year absence. Kappa Chapter now has 40 new members, and the leadership has been transformed into strong, able, and motivated hands. *by David R. Clark*

EPSILON SIGMA, University of Florida—The Epsilon Sigma Chapter of Eta Kappa Nu, here at the University of Florida, has had an amazing year of activities so far. Besides the customary Electrical Engineering Barbeque that we put on, HKN has made numerous contributions to the Electrical Engineering Department here at UF. Member Frank Miville has completed a computer program for our Department's periodical teacher evaluation. This evaluation is mandatory and must be made every semester. Frank has also made a complete record of companies and addresses to write to for recruiting information.

Evan Derison, Lou Horwitz, and Michael Gach have been completing the Faculty Photo board which shows all the members of the teaching faculty and gives some background information about them, like where they went to school and worked as well as their fields of interest. This board is very popular with students who walk by between classes and learn a little about the people they may want to take their option with.

In March, we had the very popular Engineering Fair where people and companies from all over come to show their wares. The Spring Electee class was responsible for feeding the hundreds of people who came to the Engineering Fair Barbeque where music, volleyball, BBQ chicken and Tug-of-War made for a great day.

This summer our Chapter will be very active. Besides giving a couple of Barbeques, we intend to build a Scholarship Fund for deserving EE students. Therefore, this summer we will resurrect our treasury which was drained by the banquet. HKN has received over \$800 worth of contributions from companies and alumni and this summer we are actively soliciting more contributions.

In addition to these projects, the chapter has constructed a slide show, part of which was shown at the banquet, that will be left as a memory to the activities of this year's class.

Acting President Michael Gach will build this chapter during the summer so this fall will see an even greater year for Epsilon Sigma Chapter. *by Michael Gach*

ZETA OMEGA CHAPTER, University of California, Irvine—

The 1981-82 academic year has been an eventful one for the UCI School of Engineering and quite exciting for the HKN Zeta Omega Chapter members. Our members have enthusiastically kept up the traditional role of HKN at UCI by sponsoring events in our annual Engineering Week and by lending assistance to our fellow students in their studies through our tutoring program.

In addition to our regular activities, our members had the opportunity to witness and participate in some landmark events which will act to shape the future of UCI Engineering.

In particular, this year saw the establishment of UCI's own chapter of Tau Beta Pi. In addition, the HKN officers established a proposal for an honor code for current and future UCI Engineering students. Finally, there has been a reorganization of the engineering curriculum at UCI which our members feel will substantially increase the quality of future UCI engineering graduates and, hence, add to the image of integrity our school enjoys in the academic and professional communities.

Earlier this year, Dr. Allen Stubberud, Dean of the School of Engineering, asked the officers of our chapter to submit to him a proposal for an honor code for UCI engineering students. The UCI Engineering Student Honor Code, drafted by Corresponding Secretary Frank Avella and President Alec Brok, is basically intended to describe the high standards for professional behavior which we expect our engineers to meet.

Our regular activities include sponsoring events in our annual Engineering Week in which students get to enjoy themselves for a few days. HKN-sponsored events this year included a generator cranking contest in which students test their physical strength and a video games contest where students get to play arcade games *free of charge* and win prizes to boot!

UCI's chapter of HKN maintains a tutoring program in which we offer free assistance to engineering students in their studies. HKN members volunteer their time to give help, on a drop-in basis, in subjects which include all lower division technical courses for engineers at Irvine. The tutoring program has proved to be a tremendous success.

It's been a great year and there are even greater ones ahead of us. *by Alex Brok*