

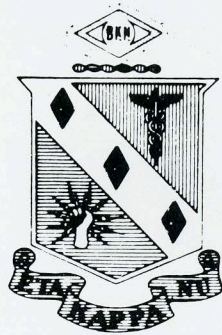
# Bridge





eta kappa nu

Electrical Engineering Honor Society  
November, 1984, Volume 81, Number 1



# BRIAN F. FITZGERALD

## OUTSTANDING YOUNG ENGINEER FOR 1983

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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

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**B**rian F. Fitzgerald is the Outstanding Young Electrical Engineer of 1983. The award was presented to him at the 48th Annual HKN Award Dinner in Philadelphia on April 30, 1984. The recognition is given annually to young electrical engineering graduates for meritorious service in the interests of their fellow men as well as for outstanding achievements in their chosen profession. At the same ceremony, Hung-Fai Stephen Law and Michael L. Steinberger were awarded Honorable Mention for 1983.

Mr. Fitzgerald is Manager of an engineering group at IBM Corp., Essex Junction, Vermont. He was named Outstanding Engineer for his "outstanding contributions to the field of computer memory technology, for his involvement in church activities and for cultural achievement."

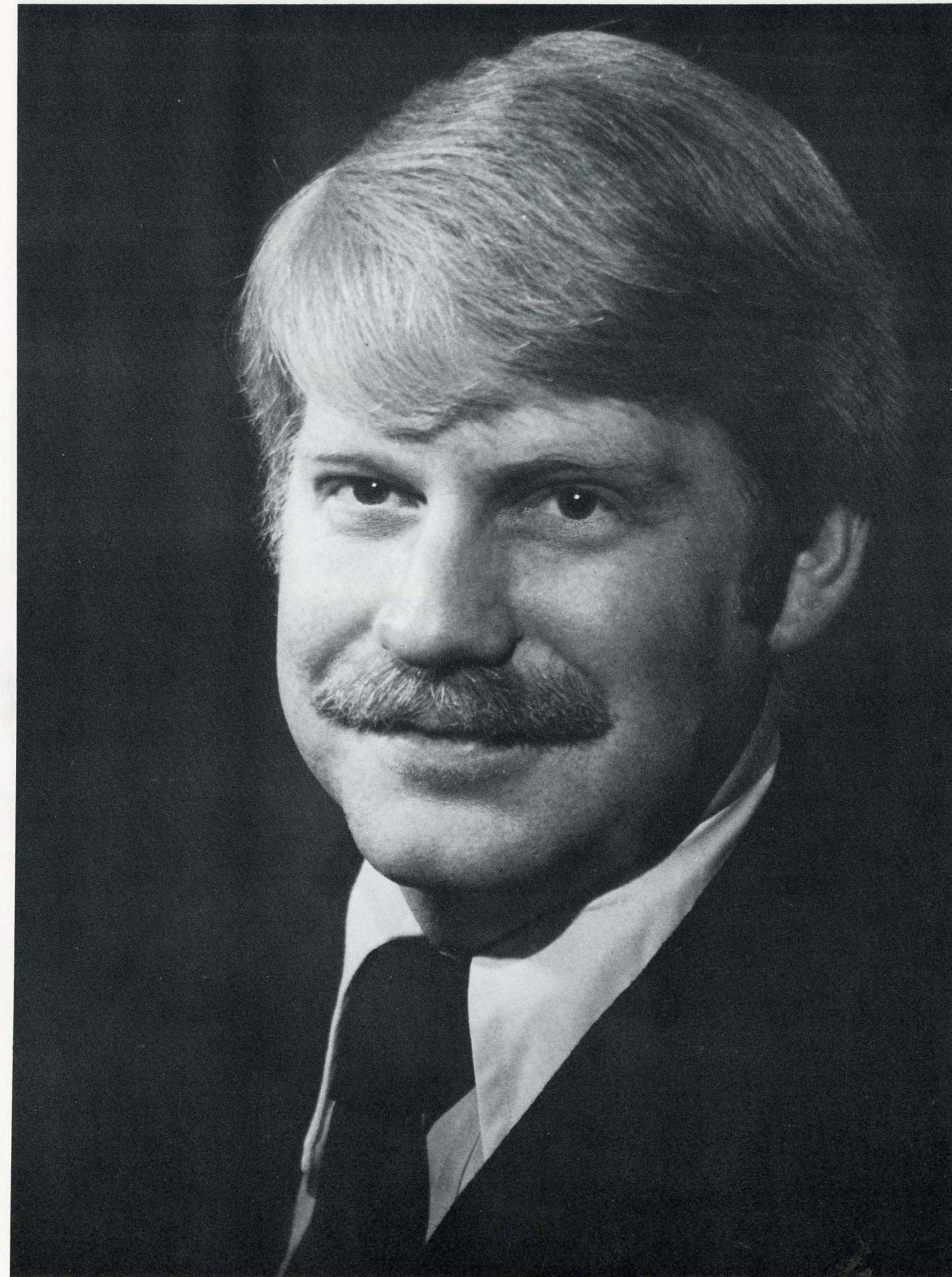
Dr. Steinberger is a Member of Technical Staff at Bell Laboratories, Holmdel, New Jersey. He received his Honorable Mention for "contributions to the field of microwave communications, for his involvement in his church music ministry, and for cultural achievement."

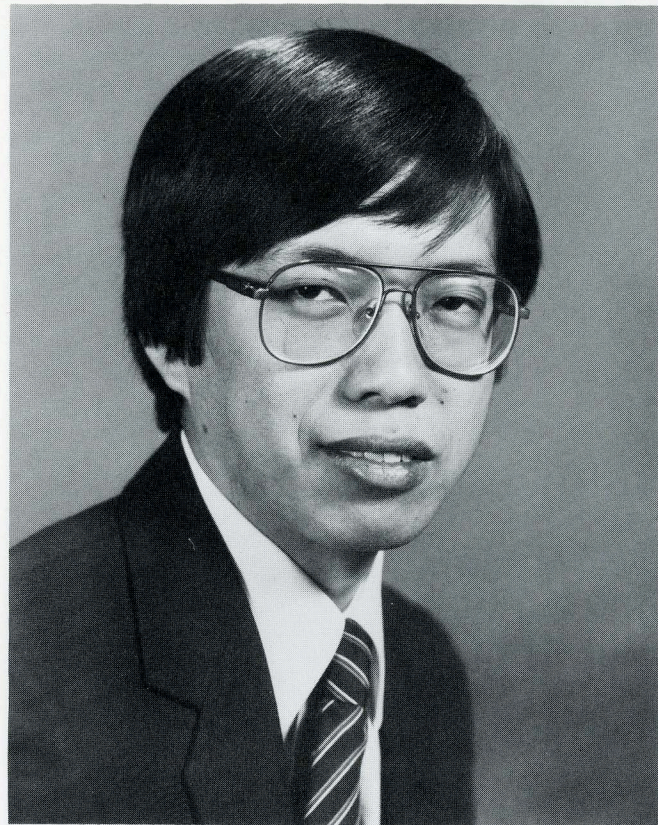
Dr. Law was a Supervisor at Bell Laboratories, Murray Hill, New Jersey, at the time he was selected for Honorable Mention. He was recognized for "contributions to the fields of integrated circuit design and biomedical technology for cultural achievements, and his involvement in church activities."

Three other engineers were recognized as Finalists:

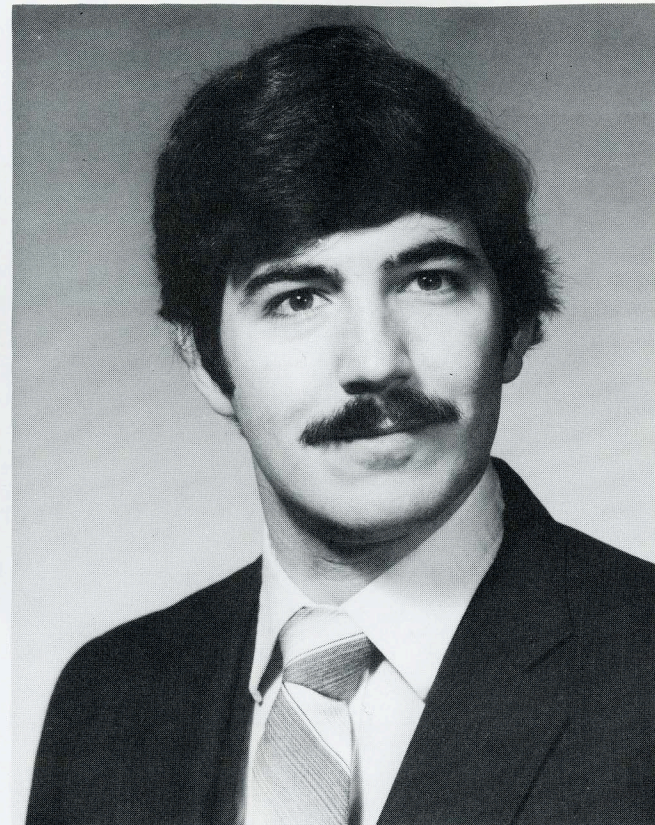
- Peter M. Balma, Public Service Electric & Gas Co., Newark, New Jersey;
- Russell R. Barton, RCA Corp., Princeton, New Jersey; and
- John W. Betz, RCA Corp., Burlington, MA.

The award winners were honored for their contributions to electrical engineering and for their contributions to society at large. Mr. Fitzgerald was nominated by Mr. Frank R. Rossi, Manager, High Density Array Design, IBM Corp., Essex Junction, Vermont. Dr. Steinberger was nominated by Dr. D. G. Thomas, Executive Director, Bell Laboratories, Holmdel, N.J. Dr. Law was nominated by Dr. M.J. Thompson, Executive Director, Bell Laboratories, Allentown, PA.





Hung-Fai S. Law



Michael L. Steinberger

The Eta Kappa Nu recognition is awarded 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. Eta Kappa Nu holds that an education based upon the acquisition of technical knowledge and the development of logical methods of thinking fits the engineer to achieve substantial success in many lines of endeavor.

The Jury of Award, appointed by the National President of Eta Kappa Nu, with the approval of the National Board of Directors, consists of two present or past national officers of Eta Kappa Nu, and three or more prominent American educators or industrialists. In 1983, the jurors were:

Mr. George L. Benning, Vice President for Advanced Technology and Engineering, Collins

Avionics Group, Rockwell International Corp.;

Dr. J. Robert Betten, Professor of Electrical Engineering, University of Missouri, (Past President of Eta Kappa Nu);

Dr. Edward M. Davis, President, General Technology Division, IBM Corp.;

Mr. Stephen A. Mallard, Sr. Vice President, Planning and Research, Public Service Electric & Gas Co.;

Mr. E. D. Maynard, Jr., Director, VHSIC PROGRAM, Office of the Under Secretary of Defense for Research and Engineering; and

Dr. George F. Mechlin, Vice President, Research and Development, Westinghouse Electric Co.

Nominations for the award are solicited each year through the Eta Kappa Nu Award Organization Committee. Nominations may be made: by any member, or group of members, of Eta Kappa Nu; by any section or group/society of the Institute of Electrical and Electronics Engineers; by the head of the EE Department of any US college or university; or by other individuals or groups, who in the opinion of the Award Organization Committee are properly qualified to make nominations.

The nominations for the 1984 awards should be submitted to the Chairman of the Award Organization Committee, or to the Executive Secretary of Eta Kappa Nu. An eligible candidate is one who:

- has an electrical engineering degree (BS, MS, or PhD) from a recognized U.S. engineering school;
- will have been graduated not more than 10 years as of May 1,

- 1984 from a specified baccalaureate program; and
- will not yet have reached his/her 35th birthday as of May 1, 1984.

Awards are made based upon (1) the candidate's achievements of note in his or her chosen work, including inventions of devices or circuits, improvements in analysis, discovery of important facts or relationships, development of new methods, exceptional results in teaching, outstanding industrial management, or direction of research and development; (2) the candidate's service for community, state, or nation, such as activity in philanthropic, church, charity, or social enterprises, leadership in youth organizations, or engage-

ment in civic or political affairs; (3) the candidate's cultural or esthetic development, such as good work done in the fine arts, architecture or the drama, and the courses taken or studies made in historical, economic, or political fields; and (4) any other noteworthy accomplishments including participation in professional societies and other organizations.

The Award Organization Committee members are: James A. D'Arcy, RCA "SelectaVision" VideoDisc Operations (Chairman); Irving Engelson, IEEE (Vice Chairman); Sheldon J. Raiter, IBM Corporation (Secretary); Clarence A. Baldwin, Westinghouse Electric Corporation; Donald Christiansen, IEEE Spec-

trum; Larry Dwon, Consultant (formerly American Electric Power Service Corp.); Albert Fakheri, American Electric Power Service Corp.; Anthony F. Gabrielle, Gulf State Utilities; Quayne G. Gennaro, New Jersey Bell Telephone Co.; Willard B. Groth, IBM Corp.; Robert W. Lucky, Bell Laboratories; George A. Mangiero, Brooklyn Polytechnic Institute; Stephen A. Mallard, Public Service Electric & Gas Co.; William E. Murray, Douglas Aircraft Co.; Ralph J. Preiss, IBM Corp.; Joseph J. Strano, New Jersey Institute of Technology; Berthold Sheffield, RCA Corp. (ret); Lawrence D. Weschler, General Electric Co.; and Roger I. Wilkinson, Bell Laboratories (ret).

JURY OF AWARD—front, l. to r.—E. J. Maynard, Jr.; Edward M. Davis; J. Robert Betten; George F. Mechlin. back, l. to r.—Stephen A. Mallard; George L. Benning; James A. D'Arcy.



# The First Time I Saw Paris

## Part Two

### Rue de la Huchette



Our hotel, the Westminster, on the Rue de la Paix, is one of those where Continental Breakfast is *graciously offered*. What they mean by that is that it is free. It consists only of a hard roll and a cup of coffee. In England and America it always includes some orange juice and sometimes cereal. Of course in England and America it is not *graciously offered*.

After breakfast we took off for one of the most interesting places in all of Paris—the Rue de la Huchette. I was determined that the days I spent in the city would be done right. I would not be the typical tourist, with guidebook in hand, seeing as many of the tourist *musts* as I could with the shallowness of a passerby. Here, for example, is the way one guidebook deals with the Huchette: *From the modern Place St. Michel let us follow the Rue de la Huchette, pausing on the way to look along the picturesque Rue Zacharie and the Rue du Chat qui Peche, which got its name from an old sign shop.* Thus with one sentence they dispose of one of the most fascinating, animated streets of the medieval Latin Quarter. To tell the truth, the Huchette is not even shown on any maps of Paris except the very largest.

The Rue de la Huchette is a relatively short and narrow street that extends from the Rue St. Jacques to the Boulevard Saint Michel, one block south of the Seine River and across from the Notre Dame Cathedral. As I entered from the west—from the Boulevard Saint Michel—I just stood there and gazed for a long time, trying to fix the view permanently in my memory. I knew that the buildings were only three hundred years old but the street itself is at least a thousand. I tried to imagine the people of the middle ages moving about, transacting business or just visiting.

The first important item is the Hotel Mt. Blanc, which is on the left just as you enter the Huchette. It is quite small and strictly second class, or maybe third, but it looks clean enough and would be a most desirable place to stay for anyone who wanted to enjoy the Huchette at night. It has one important claim to fame—it is the place where Elliot Paul wrote the book *The Last Time I Saw Paris*—a nostalgic, intimate account of life in the Rue de la Huchette. The title is taken from the song of the same name, made famous by Kate Smith, which recalled the happiness and sweetness of Paris before the German occupation of World War II.

#### OPPOSITE PAGE—

The east end of the Rue de la Huchette. Notice the street sign at top left, with the vertical word HUCHETTE. The entire sign reads CAVEAU DE LA HUCHETTE which is one of the most interesting places on the Huchette.



by PAUL K. HUDSON  
Editor — Bridge

I walked into the lobby and asked the young lady desk clerk if she could tell me anything about Paul and especially where in the hotel he did most of his writing. It turned out that she was new to the job and did not know about their one real pearl. She went into a back room to talk with some other employees and then came back and told me that Paul was all over the place but especially in the Breakfast Room. She gave me permission to take a picture. I think breakfast there is *graciously offered* but that is the extent of the eating for the day. It was a cosy and comfortable room, a great deal like the kitchen in a farm house. (see photo).

Outside the hotel, against the west wall, is a very interesting plaque—a World War II resistance plaque. Just before the Allies entered Paris, street fighting broke out all over the Latin Quarter. There were barricades at both ends of the Huchette, and as always, this made the area a government of its own, answerable to the central government only with bullets. One of the tragedies of the fierce fighting in the Rue de la Huchette is recorded on this plaque. *Here fell Jean Albert Vouillard, dead in the course of duty, killed by the Gestapo the 17th of May, 1944, at 20 hours, Rainbow.* The word Rainbow was the name of his cell of resistance fighters. Bullet holes in the wall were improved away long ago, but I do not know why. Some of the charm of the place was lost when they did that. The plaque is now broken (see photo) but I doubt that it was caused by further violence. It is my guess that a large delivery truck hit it when it was backing into the Huchette. The day I was there a large truck



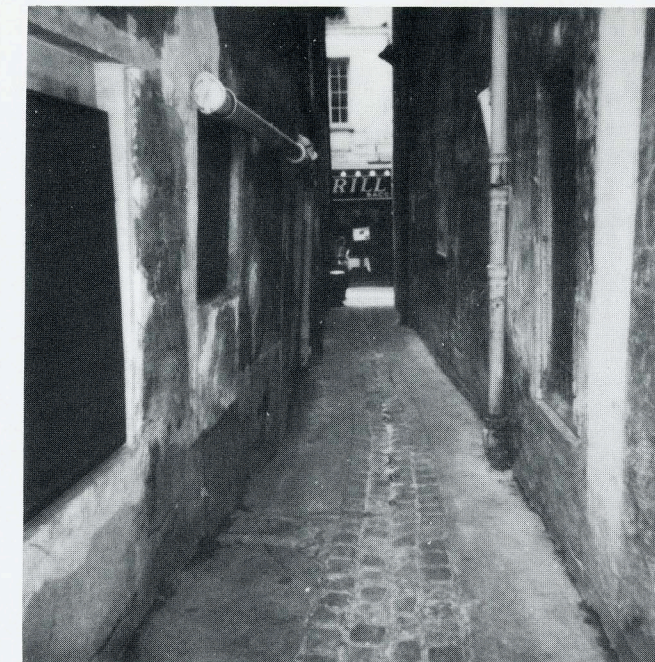
The Breakfast Room in the Hotel Mt. Blanc where Elliot Paul wrote *The Last Time I Saw Paris*. Rue de la Huchette, Paris.



The story of a tragedy on the Rue de la Huchette Paris. Jean Vouillard killed by the Gestapo on May 17th, 1944 at 20 hours Rainbow.



The smallest live theater in Paris is on the Rue de la Huchette. It holds eighty-five people.



The narrowest and most amazing street in Paris, the Rue du Chat qui Peche from the Huchette to the quay.

was backing into the place with only limited success. The street itself is only as wide as the large delivery trucks that unload there.

Over a century ago Napoleon III hired Baron Haussman to build the Boulevards and widen narrow pathways like the Huchette so that revolutionaries would be unable to barricade the streets as they did in the revolution. Fortunately he did not get finished with the Huchette because, as stated, the street was used effectively against the Germans near the end of the occupation.

Across the street from the Hotel Mt. Blanc, at number 23 Rue de la Huchette, is the smallest live theater in Paris, and perhaps the world. (see photo). It holds eighty-five patrons in a straight line with no aisle.

There are many restaurants on the Rue de la Huchette and surprisingly enough, none are French. Five and six hundred years ago the Huchette was called the Rue de Rotisseurs, or the *Street of Roasters*. Whole sheep and oxen turned on spits over open wood fires and beggars gathered around and held up their bread to soak up the smoke and smell. After all of these centuries the roasting still goes on as before although I expect the beggars are not quite so poor. I arrived on the Huchette before eleven A.M.—the time the roasting begins—so the only roasting I saw was a large chunk of processed meat. It was cylindrical in shape with a diameter of almost two

feet, and it was on spits. It looked a great deal like a leg of beef but I was told that it was made up of beef and lamb. It has a name—two in fact—and I was told what they are, but I wrote the words down on the back of my railroad ticket and the conductor has them now. There was a restaurant beside the Theater that had just finished roasting one of these things out in front by the sidewalk. It looked delicious and I was considering buying a sandwich. However, about two feet away on the wall was the mounted head of a sheep—ram, I guess, since it had horns—that did not look like much. Either they did not bother with the time and cost of a taxidermist or else the poor animal was very old and sick when it died. Anyway, it made my stomach a little queasy, so I walked away. But not without making the restaurant owner a little unhappy. He shouted some things at me and I was glad that I could not understand French. Apparently he was offended and thought that I considered his food not good enough for me. Or maybe he gets mad at everyone who does not buy.

In this same area the Rue Xavier Privas crosses over. It is a narrow street and its main claim to fame is that when the Paris garbage collectors go on strike, the street is blocked at each end and filled full of garbage, sometimes ten feet high. Obviously no doors open onto the street.

A little farther along the Huchette we come to one of the most amazing streets in the world. Notice that I

did not say that it is the most important, or longest, or widest, or anything like that. In truth it is only an alley just six feet wide that goes from the Huchette down to the quay. It is the Rue du Chat qui Peche, or the Street of the Fishing Cat. As stated before, the name came from a store sign—no doubt a fish market. I suppose it is the same sort of thing as the Pirate's Alley in New Orleans—of no real significance, but an absolute tourist *must*. Anyway, I have seen this street shown on maps that did not see fit to show the Huchette itself. I will let the reader figure that out. (see photo). Its only claim to fame, as far as I know, is that it is listed as the narrowest street in Paris.

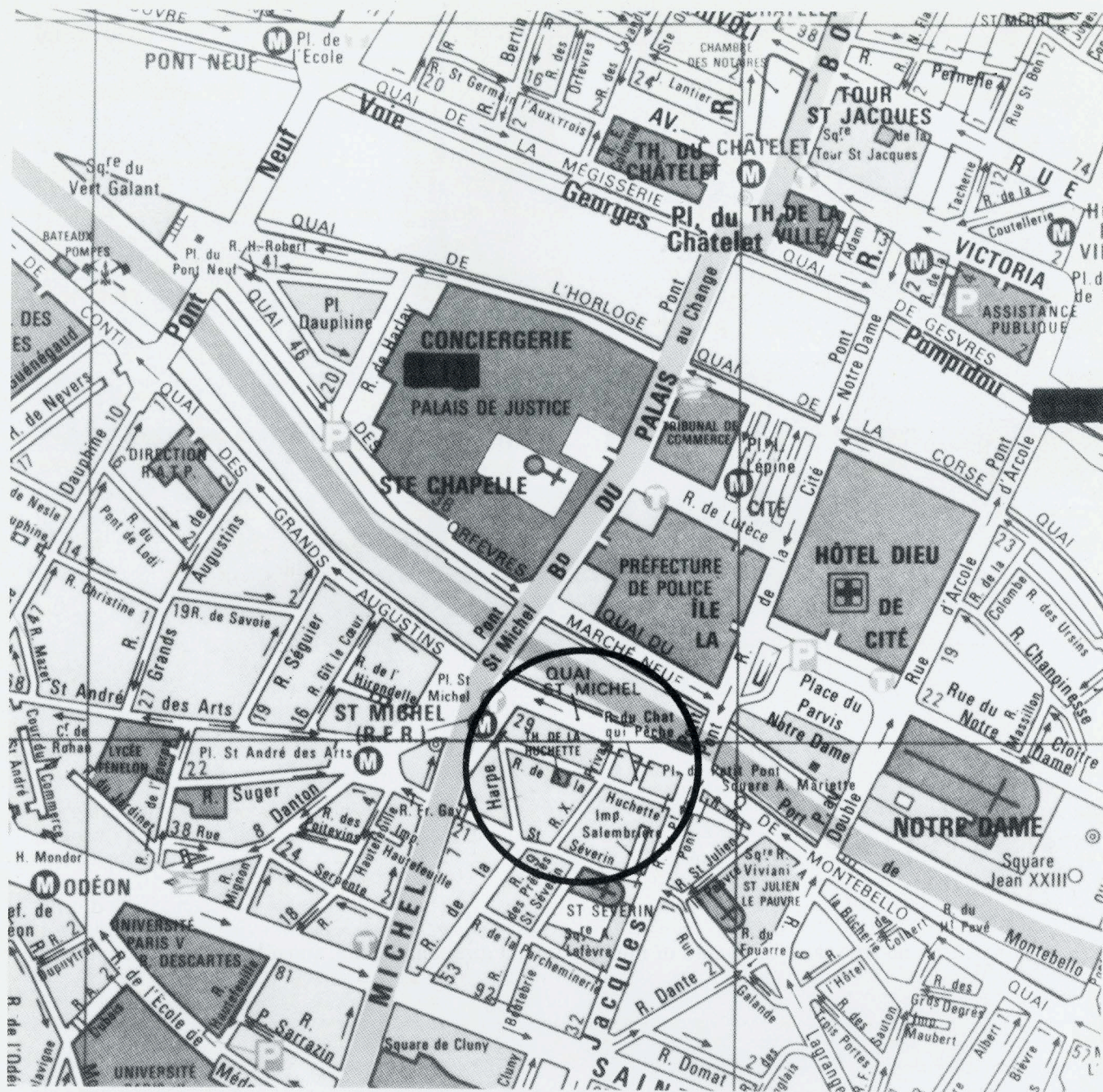
It is now largely forgotten that the most famous Frenchman who ever lived called the Rue de la Huchette *home*. He was not famous in those days, but a half-starved young man who lived in a back room—so far back that it overlooked the Seine—at the corner of the Rue de la Huchette and the Rue du Chat qui Peche. His name was Napoleon Bonaparte. He began his rise to glory when with a couple of rounds of grape he dispersed the Paris mob in front of the Church of St. Roch. After that, fortune smiled and the next time he lived on the banks of the Seine it was at the Tuileries Palace. An employee of the establishment on the corner was standing outside on the sidewalk and I asked him if this was the place where Napoleon Bonaparte once lived and he replied in English, "This is the exact place." So, I guess his life there is not completely forgotten. (see photo)

Near the end of the Huchette, just before it reaches the Rue Saint Jacques, is perhaps the most interesting place on the street, and the whole Latin area—The Caveau de la Huchette. It is a night spot for young people where they can dance and do other things and it is interesting enough on its own, since it looks like its name—a cave. But there is more to it than that. There are secret passages that lead to secret rooms in the back and below. These were very valuable to the resistance fighters during the

#### NEXT TWO PAGES

The City of Paris as seen from the towers of Notre Dame Cathedral. Cross over the first bridge at left (Petit Pont) and continue walking in the same direction for one short block—you will be on the *Rue Saint Jacques*. Look straight ahead and you will be viewing the start of the famous *Road to Santiago*. (see photo on page 15). Turn right and you will be looking down the *Rue de la Huchette* at the point where the photo on the first page (page 8) was taken. The *Rue de la Huchette* extends the distance from the first bridge to the second bridge but one block to the left of the river.





Street map showing the location of the Rue de la Huchette with reference to Notre Dame and other things. Note the Rue du Chat qui Peche and the little square with the words Th de la Huchette, which is the Theater of the Huchette.

German occupation, but their usefulness goes much farther back than that. In the Middle Ages the rooms were secret meeting places of the Knights Templars after they had been outlawed. And that is a truly interesting story.

The Knights Templars were organized as an Order to protect the pilgrims on their journeys, especially to the Holy Land. The organization was so useful that it

received many gifts of money and land. By the beginning of the 14th century they were quite wealthy and that was their undoing. King Philip the Fair decided that he would like to have the Templar money and lands.

The last Grand Master of the Knights Templars was Jacques de Molay and his trial (to make his murder legal) was held in front of the Cathedral of



A back room at the corner of the Huchette and the Fishing Cat was once home to a starving young man named Napoleon Bonaparte. The young man shown in the photo was the one who said to me "This is the exact place."



The Rue Saint Jacques today. This was the starting point of the Road to Santiago in the Middle Ages.

Notre Dame on the 11th of March, 1314. His last words were "Sirs, suffer me to hold my hands in prayer to God. Wherefore woe will come, ere long, to those who burn us without cause." He was right about that. The King was dead within a year and never got to enjoy the stolen wealth. The King's last words were, "There will be no fine tales to be told of me." Jacques de Molay was executed in the Place Dauphine, which is the open area at the down-river end of the island on which the Cathedral is located. After the execution, some of the Templars met secretly in the secret rooms in the Rue de la Huchette, but the Order never regained any of its former stature.

The east end of the Huchette where the street crosses over the Rue Saint Jacques, is one of the most historic places in the world. It is the starting point of the *Road to Santiago*, which was one of the most important pilgrim roads in the history of mankind. *Saint Jacques* is French and *Santiago* (Saint Iago) is Spanish for *Saint James*, the Patron Saint of Spain. Although he was beheaded in 44 A.D. his resurrected body was given credit for helping the Spanish chase the Moors out of Spain centuries later.

The Cathedral of Santiago is in north-west Spain, 900 miles from Paris, but a very large percentage of the population of France, not to mention hordes of other nationals, walked the road as pilgrims. When

they reached the Cathedral they were given a signed document stating that they were there, and a scallop-shell to wear the rest of their lives as a symbol. Paris Judges often gave criminals the choice of five years in jail or walk the 900 miles to Santiago. This did not work very well however. A service industry was built up in Pamplona, Spain, and other cities. The criminal would get to Pamplona and then hire a person to walk the rest of the way to get the document and scallop-shell, while he had a very nice time for several months in a tavern.

The Rue Saint Jacques is lined with buildings now (see photo) but as I stood there at that historic place I could imagine groups of pilgrims starting down the road—to salvation. They would have a strong staff to assist their walking (and perhaps a little self-defense) a bottle of water, and a heavy robe which could be taken off and used as a cover at night. The old, the weak, the infirm, and the ill, would likely not return, but it was something they had to do—a personal matter between each of them and their God.

Give me my scallop-shell of quiet;  
My staff of faith to walk upon,  
My script of joy, immortal diet;  
My bottle of salvation,  
My gown of glory, hope's true gage,  
And thus I'll take my pilgrimage.

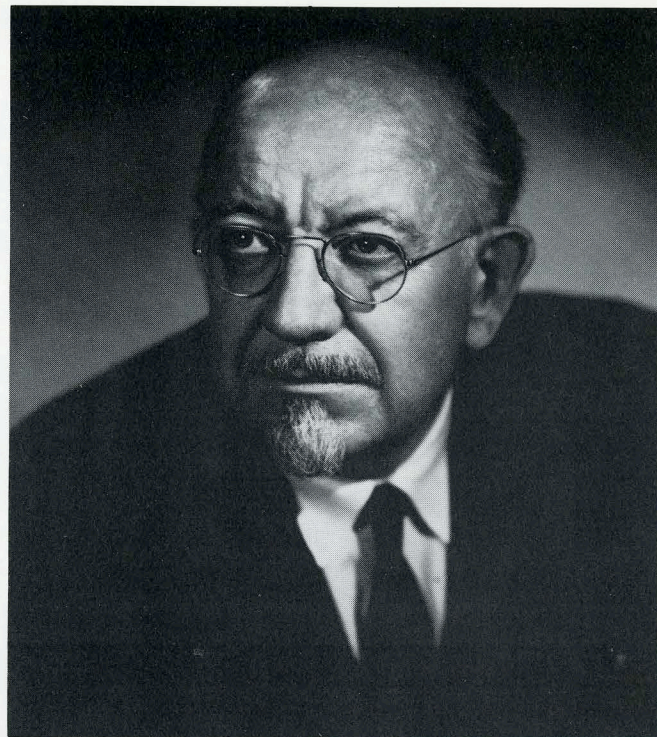
Sir Walter Raleigh



# and part of which I was

## Recollections of a Research Engineer

George H. Brown



For many years I have entertained my friends and colleagues with anecdotes of the passing scene until I had acquired a certain reputation as a raconteur of sorts. These friends urged me to get into print. Others lamented that there was no adequate record of the coming of color television and pointed to me as a participant in the struggle to tell the story. A busy professional life served as an excuse for delaying this task.

When I retired in 1973 I determined to do some writing. A cruise on the Mediterranean and an extended visit to South Africa together with introducing two grandsons to European travel helped to justify my procrastina-

BRIDGE is pleased to welcome Dr. George H. Brown to our Editorial Staff as a Contributing Editor. Dr. Brown was formerly Executive Vice President for Research and Engineering of the entire RCA Corporation. He has received many honors including Eminent Membership in Eta Kappa Nu.

tion. Invitations to give the Shoenberg Memorial Lecture at the Royal Institution and to take part in the Marconi Centenary program provided further reasons for delay.

Finally in February, 1977, I crashed on an icy sidewalk and landed in the Princeton Hospital with a busted hip. Faced with several weeks in traction, I ordered my wife to bring me an adequate supply of writing material. At last I would write a book. But I was foiled by the sedatives and left for home after five weeks without a single word on paper.

However during the entire month of March, the weather was benign and I spent several weeks in a wheelchair on our terrace scribbling madly at last. Two years later I had produced a stack of manuscript which my former secretary, Mrs. Ann Baker, had converted into 350 neatly typed pages as well as a large number of Xerox copies. One of the copies was then sent to the United States Copyright Office.

The next step was to consult

Literary Market Place for the names and addresses of a number of publishers and the name of an editor at each organization. Then the charade began. At the very first publishing office, the receptionist advised that I should have an agent since her company did not like to deal directly with an author.

I contacted a few agents most of whom were only interested in an established author. Several agents offered to read the manuscript for a fee ranging from one hundred to three hundred dollars. One very helpful agent who read the manuscript at no charge advised me that it was not a dirty book and had no sex descriptions so no major publisher would touch it.

In spite of this advice I sent copies to a number of major publishers. The perfunctory letters of rejection were so surprisingly alike in wording that they might well have come from the same source. One morning at half past ten my wife and I left a copy with a well-known publisher in New York. The manuscript was returned with a letter explaining

how their senior editorial staff had given great consideration to my manuscript before reaching a negative decision. Since the postmark on the returned parcel showed it had been mailed exactly twenty-four hours to the minute after we had left the package, I felt it necessary to pen a letter in reply to thank the senior staff for staying up all night to study my treatise.

I wrote a letter to the chairman of Random House telling him that I had a 350-page manuscript. I neglected to give him an outline or to tell him what kind of a manuscript I had produced. He replied that my subject did not fit Random House publishing plans. Within a few months the New York Times carried an article telling how the chairman had been denied a visa by Russia to go to Moscow for a book-publishers fair and the article quoted the fulminations of the indignant chairman. I immediately wrote to tell him that if he had read my chapter "The Russians Are Coming" he would have known how to deal with the situation.

The editor of the University of Wisconsin Press rejected my manuscript on the grounds that it was not an autobiography like that of Howard Mumford Jones. On reading the Jones treatise, I realized that the editor had unwittingly paid me a compliment.

The editor of the MIT Press rejected my effort on the basis that his press published only scholarly works. When a year later his press produced an exceptionally insipid engineering autobiography I wrote to the editor to say I had noted his change in editorial policy.

Another editor suggested that I take out the personal anecdotes while still another pointed out that my autobiography lacked personal anecdotes. And still another, failing to see that my opus was a series of vignettes on various subjects, wanted me to rewrite the whole thing in order to achieve chronological order. I did not think this suggestion was worthy of response so when he pursued the matter by inquiring what I thought of his suggestion, I replied that I could only quote Dr. Johnson who said that the coldest thing he had ever

encountered was the icy stare of an author who had been asked to change his manuscript.

Although I had been warned by the manager of a local bookstore and by a couple of friends who had been burned, I decided to try one of the so-called "vanity" presses. I picked one whose advertisement in a Phi Beta Kappa publication gave it an air of respectability. I received a slick brochure which showed an elegant entrance to a building purported to be that of the press so my wife and I went to the address in New York only to find a dilapidated building with a shabby entrance, a dingy dimly-lighted hallway, and a creaky wobbly elevator. The offices were just what the hallway promised. We left a manuscript just to be gracious. A few days later, I received a letter telling me what a glorious piece of literature I had produced and an offer to publish my book for approximately ten-thousand dollars. My letter in reply ordered the manuscript to be returned to me. Then I received a phone call to tell me that this great work would be partially subsidized by the press. I said, "Return the manuscript." Subsequent phone calls from the press reduced my cost several times until I finally was able to terminate the pursuit.

One publisher suggested that he would be interested in a book telling how to build a color-television receiver. I learned that HOW TO—books are in great demand. HOW TO MAKE MONEY ON THE STOCK MARKET, HOW TO BUILD A HOUSE, HOW TO CHEAT ON YOUR INCOME TAX, and even HOW TO GET YOUR BOOK PUBLISHED!

Then came brighter days. An old friend and colleague, Dr. Kerns Powers, who had read my manuscript made a highly imaginative proposal. His plan was to have printed one-hundred copies of a numbered limited edition, autographed and in an extra-special binding. He then wrote to a large number of my friends and acquaintances around the world, offering these special copies at one-hundred dollars each. While he was thus occupied, I wrote to Mr.

L. W. Mueller of the Harlo Printing Company in Detroit to obtain a quotation for printing and binding the limited edition as well as nine-hundred copies in a very respectable binding.

Within a few months, Dr. Powers had received checks from England, France, Holland, Switzerland, Italy, and Japan, as well as the United States and Canada in an amount more than sufficient to meet the printing bill so we proceeded to sign the contract with the Harlo Printing Company.

Now that we had a printer, we needed the imprint of a publisher. A few years before, my wife and I had spent a number of days at St. Andrews in Scotland. Several times as we went for a drive in the countryside, we passed through the very attractive village of Cupar. This led us to select the name 'Angus Cupar Publishers' because I liked 'Cupar' and for years my wife had been intrigued by 'Angus.' A few months after this name had been inscribed in gold on one-hundred copies of the book, I was astonished to find on a map of Scotland another village near Dundee called Cupar Angus.

The boxes of books arrived on November first, 1982, just as Mr. Mueller had promised. The limited-edition copies were indeed elegant and the ordinary copies were far from ordinary. Comparison with a number of trade books at a local bookstore showed that Harlo Printing excelled in its work.

I sat down to put suitable inscriptions in the limited-edition copies and the mailing began. A few good reviews in prestigious journals helped the sales which have continued at a goodly pace.

I am very appreciative of the effort Kerns Powers has put into the tasks of record keeping, mailing, and sales-tax payments but his imaginative approach to publishing surmounts it all. Particularly, I am grateful to MY ONE—HUNDRED DOLLAR FRIENDS.

And Part of Which I Was—Recollections of a Research Engineer; George H. Brown. Available at Angus Cupar Publishers, 117 Hunt Drive, Princeton, New Jersey 08540; \$20 postpaid.

# POWER ENGINEERING

By John Kemper

Vice President, Research and Engineering  
Philadelphia Electric Company

Times have changed. It is just not the same. It isn't fun any more. Remember the "good old days" when we were building and trail-blazing new ideas, new equipment, new plants. Now all we see are the three R's—regulation, regulation, regulation. I don't care what power engineer you talk to—be it Texas or Michigan, Florida or Maine. It is all the same.

Ah, yes, times have changed, but is it all that bad? I would like to take this opportunity to explore with you that theme—Power Engineering Today—Times Have Changed, but more important, power engineering in the future—how will it change?

Let's face it. Times have changed for all engineers. I do not know of a profession, even medicine, where the explosion in all the "ologies" has had more of an impact on careers than in engineering, especially power engineering.

Put simply, today and in the future, the power engineer's biggest challenge is *change*—preparing for change—handling the change—conquering the change:

- Be it technology (what tremendous new equipment—a great challenge!)
- Be it environmental (there's a change—more about this later)
- Be it financial (can we raise the money—major problem)

- Be it bureaucratic or regulatory (what a change)
- Be it media-created (our biggest change)
- Power vs. computer (just imagine if the media was negative to computer development)

Hopefully, power engineers will not always be in a reactive mode, but can as good engineers, be able to plan, to analyze, and to solve the problem. Now it is great at my age to philosophize about what is going to happen at what could almost be the twilight of my career. (I hope not, but I'm getting there.) More important, how does the engineer in the trenches see it. I recently conducted several interviews with our young engineers concerning change and the future. Let's hear what a few of them have to say.

What's it like today? What will it be like in the future? How do the engineers see it? Let's look at a few *scenarios* of the guys who really do the engineering. Interestingly, that's going to be one of the changes. Guys and gals. Not just guys. Some engineering schools of considerable reputation have 20-25% women in this year's freshman class.

What about engineers in Electrical Engineering? Here are two young men's opinions:

"As an instrument and control engineer, I am involved in the first

applications of microprocessor based controls in fossil fueled generating stations. These new systems have redundancy, CRT control and self-diagnostic capability—really new and exciting technology. The challenge I face is marrying this new technology to existing systems in old plants. The cost of the new hardware is amazingly low for the benefits to be derived. However, the overall cost of the projects is high because of the problems associated with the installation in the old plants. What about the future? I see the technology continuing to change rapidly. Just keeping up with the changes will be a challenge. In order to survive, I will have to "keep up" by taking additional courses and attending factory training sessions. The end result will be more effective use of digital smarts through higher levels of control rather than just replacement of analog instruments. We will see the first applications at nuclear plants in non-safety systems that will require new levels of system availability. There seems to be no end to the possibilities in future control process facilities in our generating stations." Ah, yes, good news—a great and interesting challenge—really fun.

The next Electrical Engineer:

"As a transmission line designer for the Philadelphia Electric Co., I have had to deal with the changes resulting from the "open planning"

concept that was instituted in the mid 1970s. It is no longer possible to design a line based on the most economic means of building a line from A to B. Now I must deal with governmental regulations and public awareness which adds a new dimension to the design process. I have to consider the visual impact of the line effects on areas of historical significance, the concerns of the population in the area before determining the route and the type of structure to be used. As I look to the future, it is apparent that these outside pressures will increase, and it will be increasingly difficult to obtain new rights-of-way. In all probability, legislation will eliminate aerial line construction. In urban areas, everything will be underground. Existing transmission corridors in suburban and rural

areas will provide the only feasible paths for new facilities. I will be forced to find ways to increase the capacity of existing lines by re-conductoring, rebuilding, or using new technology such as DC or gas insulated conductors. One thing is certain, and that is that the ability to get from A to B will be a real challenge." (A really tough challenge—our power engineer's biggest problem.)

What about the Research engineer? The research power engineer's role has changed dramatically with the advent of the Electric Power Research Institute. However, we still do some of our own research, but it is mostly cooperation across the industry. Nevertheless, we still have some men who are specialists—in research and development.

I talked to one of our research engineers the other day. His expertise is in system modeling and control system modeling. Listen to him:

"I recall that in my early career, I thought of engineers as functioning as part of a large organization with most of the important technical work done by teams working in specialized areas. I thought that the most attractive jobs for engineers were those which involved overall project management responsibility. Unfortunately, it seemed that choosing this path would take me away from the more technical areas I was really interested in. Today, I feel that I have the best of both worlds. I am heavily involved in complex technical tasks while acquiring more and more management responsi-

At a luncheon meeting of the Philadelphia Alumni Chapter Mr. John S. Kemper was initiated into Eta Kappa Nu. At the head table, l to r, is George Balderston, Past International Director; Dick Hamilton, President of the Philadelphia Alumni Chapter; new initiate John Kemper, Vice President for

Engineering and Research, Philadelphia Electric Co; Gary Ridge, Vice President of the Chapter; Howard Sheppard, Past International President. Mr. Kemper's son Chris served as President of the HKN Chapter at Lafayette College several years ago.



bility. I think that this has been caused by the increasing complexity of power systems, by the need for more complete information in order to make economic decisions, and by the increasing demands of regulatory groups. Fortunately, the evolution of computer-based systems has made it possible for individuals to perform sophisticated analyses which in the past would have required a mass of hand calculations or even might not have been possible at all. I also think that today's engineer needs to know more than one discipline in order to make optimum use of the available tools. I have the background to support this opinion since I have been involved in projects involving nuclear, coal, and gasification combined-cycle power plants, liquified natural gas storage systems, and flue-gas desulfurization plants. For the future, I see the trend towards more complex systems and more stringent requirements increasing for the power industry. This could mean that the demand for engineers with systems analysis skills based on computer-related equipment will continue to increase. I suggest that this type of engineering position may become even more attractive as other aspects of the business come to depend more and more on information systems. I think that with access to almost unlimited data and analytical capabilities in many fields, the engineer of the

future will be called upon to accept more and more responsibilities—not only for the power industry, but for the nation as a whole.” Beautifully said! Some engineers still have a flare.

What about the system planners—the long range thinkers? Their biggest problem now with any new load growth with no new generation is will we be able to get it from here to there with no new transmission? Let's look at an engineer in System Planning.

“I have fifteen years of experience in the System Planning Division, and a recent project I was involved with was directed at the analysis of the system security aspects of high-voltage capacitors. These capacitors were installed to improve the ability of the Penna., N.J., Md. Interconnection Grid to transfer low-priced, coal-fired generation from western to eastern PJM. A concern was the system stability aspects at these higher transmission line loadings. System stability determines that after a fault and line outage the transition to the new steady state will not cause further outages. This transition period can last for minutes although the first several seconds are the most critical. Using available modeling technology, the analysis showed the system to be secure using conservative assumptions. For example, the present knowledge of how load changes during the transition

period is imprecise so a change detrimental to stability is assumed. EPRI research should give an improved idea of what actually occurs. In ten to fifteen years from now we would expect that operations with even tighter tolerance on the transmission line loading limits could be evaluated with resulting customer savings through more sophisticated large-scale computer analyses. The present modeling tools available are at the edge of our knowledge for system analysis. Our future engineer will be using tools and techniques probably an order of magnitude better than today. The technology will probably be directed at more detailed representations and perhaps a “real-time” on-line operating tool.”

I could go on about our Mechanical engineers, our Construction engineers, the designer on the board. Ah, there will be a change with the advent of CAD. Yes, there has been change down through the years in power engineering, but just from the small sample I have reviewed with you, the young are ready. They have the tools, the new ideas, the new knowledge—the drive. They are ready to take on the R's.

Yes, change is always present. Engineers must meet change as a challenge. What's new? Plenty is new, but challenge and conquering any change is what power engineering is all about.

## Iota Beta . . .

# Milwaukee College of Engineering

by EDWARD W. CHANDLER

Thirty-three students and faculty members were initiated into Eta Kappa Nu at the Installation program of Iota Beta Chapter at the Milwaukee College of Engineering on February 10th, 1984. The Installation and banquet were held in the Dining Hall of the Student Union Building.

The Chapter was installed by Past International President Jack Farley, assisted by Executive Secretary Paul Hudson.

At the banquet, Jack Farley presented the Official Charter to Provost Francis V. Cannon, Jr., Senior Vice President of Academics at the College. Also present were Vice President of Academic Resources Richard J. Ungrodt, Dean of Students Patrick J. Coffey, and Dean of Research Thomas W. Davis who

also serves as the Electrical Engineering and Computer Science Department Chairman. Both of the above Vice Presidents are electrical engineers.

Several cordial and interesting talks were given. It was pointed out that the Milwaukee School of Engineering is almost exactly the same age as Eta Kappa Nu. The College was founded in 1903 and Eta Kappa Nu in 1904.

Past President Jack Farley presents the Charter to Provost Francis V. Cannon. Also shown, l to r, are Edward W. Chandler, Executive Secretary Paul Hudson (seated) and Dr. Michael T. Chier. Photo by John Dallas.



### JOIN AN ETA KAPPA NU TRADITION

Solid Brass Casting paper weight, 4 in. by 2.5 in. makes a lovely and practical memento of your induction into the Honor Society. Many Chapters require their pledges to polish the castings as part of their pledge duties. Prices: one casting, \$5.00. Two or more, \$4.00 each post-paid. Send order to: Eta Kappa Nu, Delta Nu Chapter, Attn. Dr. R. E. Lueg, E.E. Dept., P.O. Box 6169, University, Alabama, 35486.



**Eta Kappa Nu  
Awards In  
THE WORLD REGION**

As part of Eta Kappa Nu's seventy-fifth anniversary celebration in 1979, a policy was established whereby we would send greetings and extend the hand of friendship and good-will to electrical engineers and electrical engineering schools in other parts of the world. The only surprising thing about it is that it took us seventy-five years to arrive at such a sensible and altogether wonderful idea.

During the last five years we have inducted new members in nine different countries through our Eta or "at large" branch. We have also established recognition awards to outstanding students at four Universities—The City University and the University College in London, the Ecole Supérieure d'Electricite in Paris, and the University of Manitoba in Canada.

A World Region of Eta Kappa Nu has been established. Dr. Ben Bennetts of the University of Southampton, England, and Dr. Paul Hagouel of the Aristotelian University, Greece, have served regular terms on our Board of Directors. Professor Arthur Ellison, Head of the Electrical Engineering Department at the City University London, is currently serving on the Board.

Eta Kappa Nu's first recognition award to an Outstanding Electrical Engineering Student at the City University London was recently presented to Mr. Nicholas Huzan. It consisted of an attractive Recognition Certificate, a substantial Monetary Gift, and a Certificate of Membership in Eta Kappa Nu. The monetary gift came from the proceeds of

Trust Funds that have been established for that purpose by gifts from the Members and Chapters of the Eta Kappa Nu COLLEGE OF BENEFACTORS. The Award was presented by Professor Ellison at a special Award Dinner, and he has filed the following report:

I am very happy to tell you that our Departmental Annual Dinner and Prizegiving was held in the University last Friday 23rd March 1984, and this time I presented the prizes myself. Some years we have a distinguished 'Captain of industry' to do it.

The evening was a delightful occasion and we had a number of alumni besides the prize-winners. When I presented the Eta Kappa

Nu Association prize I explained that it was in my capacity as a Board Member representing the Association. I first explained what the Eta Kappa Nu Association, with its aims and objects, was, and described the benefits to our prize-winners of the Memberships which you and the Association have so kindly and generously conferred on them for the last three years. I also explained that your latest generous act was to give us the Eta Kappa Nu prize for an 'outstanding electrical student'. The prize has now been officially accepted by the Senate of the University and appears on the official list. So I can now thank you and the Association officially on behalf of the whole University for your kind and generous gift."

*Dr. Arthur Ellison presenting the Outstanding Student Award to Mr. Nicholas Huzan.*



# MERRY MOMENTS WITH MARCIA

Marie won't play ball—unless you furnish the diamond.

Joe invited his girlfriend up to his apartment for a scotch and sofa.

Definition of OLD: an extinguished looking gentleman or lady.

A man seldom makes the same mistake twice. Generally it's three or more times.

Engineers calculate that the number of blasts that will come from auto horns in a traffic jam is equal to the sum of the squares at the wheel.

In golf (as in life), the attempt to do something in one stroke that needs two is apt to result in taking three.

I just heard it takes only one hour to find in others the faults we often fail to discover in ourselves in a lifetime.

Then there was the wealthy Texan who bought his son a set of twelve golf clubs. All but two had a swimming pool with it.

People who don't know whether they are coming or going are usually in the biggest hurry to get there.

"I play golf in the seventies," said Paul. "When it gets hotter, I quit."

There is no medicine like hope, no incentive so great, and no tonic so powerful as expectation of something better tomorrow.

For a Life of Contentment  
*Health*—enough to make work a pleasure.  
*Wealth*—enough to support your needs.  
*Strength*—to battle with difficulties and overcome them.  
*Grace*—enough to confess sins and forsake them.  
*Patience*—enough to toil until some good is accomplished.  
*Charity*—enough to see some good in your neighbor.  
*Love*—enough to move you to be useful and helpful.  
*Faith*—enough to make real the things of God.  
*Hope*—enough to remove all anxious fears concerning the future.

George and Ed were enjoying a drink in the clubhouse. "You've been watching me play for several years," said George. "Any ideas on how I can cut several strokes off my score?" "Yes," said Ed. "Quit on the 15th!"

John says after his divorce he married his wife's sister so he wouldn't have to break in a new mother-in-law.

And I've heard Ed was so used to cheating at golf that when he got a hole-in-one he put down a zero on his score card.

Dan and Don were playing a mountainous course in the Swiss Alps. Dan joined his partner after playing a difficult shot. "How many?" asked Don. "Three." "Three? I heard six!" "Oh, three were echoes."

Jim picked up two girls at the track. It was his daily double.

Did you hear about the Scotch golfer who wore a black band on his sleeve? He was in mourning for a lost golf ball.

I took off thirty pounds when I was abroad. Took it off an Englishman.

Then I went on a vacation for change and rest. The waiter got the change and the hotel got the rest.

I've heard about a Scotsman who went to a wedding with a whiskbroom and brought home the rice for dinner.



by **MARCIA PETERMAN**

**GAMMA OMEGA CHAPTER, Mississippi State University** — In comparison to recent years, the school year was marked by much growth in the activities conducted by the Gamma Omega Chapter at Mississippi State University. This growth was due partly to the welcomed input to the chapter from Professor Paul B. Jacob, Jr., the national president of Eta Kappa Nu during the year and also Professor of Electrical Engineering and Associate Head of the Electrical Engineering Department at M.S.U., and to the leadership of our chapter president, Ivy Pinion.

Regular chapter business included informal and formal initiation ceremonies for pledges in the fall and spring semester. An Outstanding Pledge Award was given to one initiate in the fall and to two initiates in the spring. After the spring ceremony a formal initiation banquet was held in honor of the initiates featuring Prof. Jacob as the speaker. The chapter's social events were wrapped up with the annual HKN Spring Picnic where student and faculty members feasted on boiled shrimp.

Other chapter activities included projects of a varied nature. In order to give HKN some campus-wide exposure, two conscientious members prepared a display and set it up in the entrance hall of the M.S.U. library. This display contained artifacts of the chapter and information about Eta Kappa Nu. Gamma Omega entered a team in the M.S.U. Name-That-Tune Contest, and our team captured the second place award. The chapter nominated Kenneth Jefferies for the Alton B. Zerby Outstanding Electrical Engineering Student Award.

By far, the most rewarding activity for all who participated was the organization of tutoring sessions. At least once every two weeks members of

the Gamma Omega Chapter conducted four tutoring sessions for students enrolled in the first four electrical engineering courses at M.S.U. This is definitely an activity which will be continued in the upcoming school year.

**DELTA EPSILON CHAPTER, Ohio University** — The Delta Epsilon Chapter has begun the school year by conducting or participating in several productive activities this past Fall Quarter.

Our annual Career Day, in which around 20 companies participated, was held in September and HKN members helped to set up for it and register students attending the function.

A pledge smoker was held in October, with current plans calling for the initiation of new members to take place in the early Winter Quarter.

In November, our members helped to carry out faculty and course evaluations, and also, as a fund-raising activity, our chapter showed several short comedies for a one dollar admission over the course of two nights. Additional movie showings are planned for the 1984 Winter Quarter, as is our annual Casino Night.

*by Kenneth Pierce*

**DELTA OMICRON CHAPTER, University of New Mexico** — During the year we established, organized and now oversee, a department scholar program at U.N.M. to help the department with tutoring and grading. In this program, members of HKN and other academically qualified students volunteered a few hours of their time each week (without pay) to tutor students or grade homework papers for teachers.

Our favorite and most time consuming project is our message board. We are designing and building a special micro computer system to increase the speed, ease of operation and efficiency of the system. Most of the hardware design and manufacturing has been completed. The software still needs to be finished. When the system is completed and thoroughly tested we will send you a complete and indepth write-up on it.

We encourage the members of other chapters to become highly active in their chapters because your chapter can be as enjoyable, challenging, and rewarding as you make it. So, shoot for the moon!

*by Terry Hardin*

**GAMMA BETA CHAPTER, Northeastern University** — The Gamma Beta Chapter of Eta Kappa Nu held its spring initiation and annual banquet on May 22. Thirty-nine undergraduate students were inducted into our brotherhood. The work day project for these new members was a great success. The election of new officers took place at a general meeting held on May 16. An amendment to our constitution allowed the induction of three Juniors along with three Seniors into these positions. In the Summer Quarter members continued to tutor students in undergraduate EE courses.

For the Fall Quarter we have planned several meetings and a series of lectures by guest speakers. We also plan to form a committee to evaluate the present EE curriculum with emphasis on restructuring the EE laboratory program. The faculty seems to be very interested in any suggestions we may make. The Fall will also see the initiation of new members and another work day program.

*by John Sangermano*