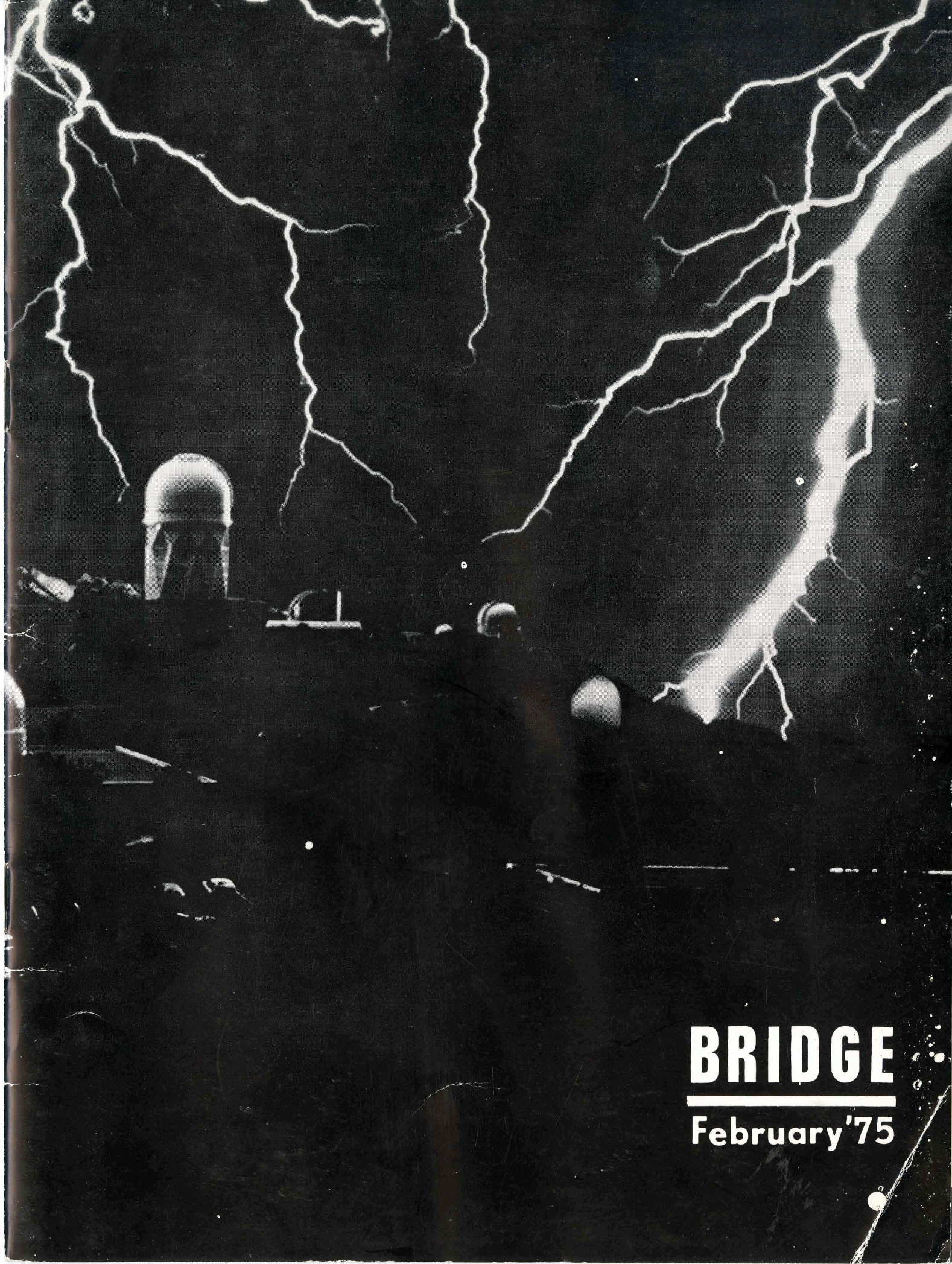

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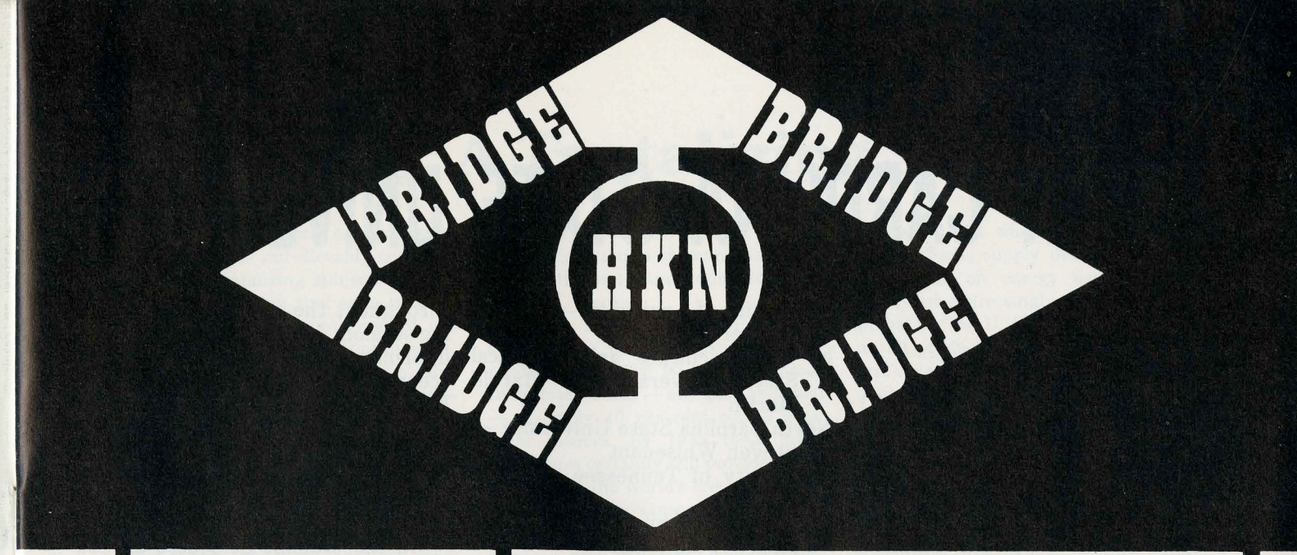

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eta kappa nu

Electrical Engineering Honor Society

FEBRUARY 1975, Vol. 71, No. 2

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

The BRIDGE is published four times annually—November, February, May, August—and is published by Eta Kappa Nu, Haywood Publishing Company, 5th & Ferry Sts., Lafayette, Indiana. Second class postage paid at Champaign, Illinois and additonal 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 61802.

Member Association of College Honor Societies

Regional Visitation . . .

NORTH CAROLINA STATE UNIVERSITY

by
Steven Whisenant
President

On March 30, 1974 the Beta-Eta Chapter of Eta Kappa Nu hosted a Regional Visitaion on the campus of N. C. State University in Raleigh, North Carolina. A Regional Visitation is a meeting of delegates from student chapters at which the participants discuss their chapter problems and how they are being solved. Ten of the eleven chapters in region nine were represented by a student and Anthony A. Chizmadia, member of the National Board of Directors presided over the meeting. The following schools were represented:

University of Kentucky — Robert Jackson
University of Louisville — Charles Friebert
N. C. Agriculture and Technical State University — Harold Martin
North Carolina State University — Steven Whisenant
University of Tennessee — Eddy Julian
Tennessee Technological University — Paul Allen
Vanderbilt University — Mark Shepard
University of Virginia — Wesley McDonald
Virginia Polytechnic Institute — Daniel Jarrett

The main scope of the visitation was short reports from each chapter delegate. These reports included chapter activities, community service projects, and problems within each chapter. Following the reports was an open discussion of chapter problems and activities. Mr. Chizmadia presided over the meeting and offered helpful suggestions throughout the course of the morning session. Also he presented some information from HKN's national scene. After lunch Dr. George Hoadley, Chairman of the Electrical Engineering Department, and Steven Whisenant, President of Beta-Eta Chapter, conducted a tour of the department's research activities and student laboratory stations.

All the student delegates agreed that a Regional Visitation is a very worthwhile activity. It offers helpful suggestions to area chapters and places more meaning on the principles of HKN.

Regional delegates — [L to R] Front Row: Mr. Anthony Chizmadia, National Director, Paul Allen, Daniel Jarrett, Eddy Julian, Steven Whisenant, Back Row: Charles Friebert, Mark Shepard, Wesley McDonald, Robert Jackson.

Energy: A Tantalizing Subject

by Dr. A. J. Meyer

THE PROBLEM of world energy supply and demand is unbelievably complex. But it's a tantalizing subject. In fact, it is so tantalizing that it is well on its way toward becoming one of the nation's most popular fields of thought, a subject for widespread enquiry, and perhaps even a new academic discipline. Studies by the hundred are underway. Universities are tooling up everywhere to focus teaching and research on energy matters. A clanging, Omdurman-like charge of untethered academics, graduate students, and Washington "operators" into the field has begun. The Ford Foundation has made its usual large grant to find instantaneous solutions to incredibly complicated problems. Ph. D. dissertations by the thousand will result, in every conceivable discipline. A few examples: Psychology — "How to teach caribou to jump over 48-inch pipe." Linguistics — "Frequency of recurrence of the words *oil* and *gas* in speeches by Harvard Square ecofreaks." Political science — "How to convince the world that neither Arab nor American politicians really mean it when they lavish invective on each other." Sociology — "Can American society survive without the electric toothbrush?" Economics — Here, the possibilities for banality are too numerous to mention. Out of all this, probably in the "hard sciences," will come some good work. We must also look forward to an avalanche of drivel. Hot air pollution will be a major by-product.

In the hope of holding the latter to a minimum, I offer the following general observations which are beyond argument.

FIRST: Using conservative estimates, energy demand will more than double by 1985, and certainly will quadruple by the end of this century. Even allowing for forecasting error, upward movement in world energy demand is inevitable.

SECOND: Nobody knows what end-use patterns for energy will emerge 15 to 30 years from now. These will vary from nation to nation, continent to continent, high income to low income areas, and will largely reflect prevailing levels of technology and public policy in consuming areas. Today, in the United States, for example, industry takes just under one-third of all energy produced, electric utilities and transportation consume half, and residential users and commercial enterprises, the rest.

THIRD: The sources of all this energy for the next 30 years are more predictable. Today, 90 per cent comes from fossil fuels — oil, gas, and coal — and only 10 per cent comes from other sources. By 1985 fossil fuels will almost certainly still provide three-quarters of the world's energy, and by 2000, about the same. Coal's relative role will drop somewhat, and nuclear energy's role will rise. Nevertheless, during the decade of the 1970's, the world will consume more oil than it has since the dawn of history. The lesson is simple and stark: The world's energy will come mainly from fossil fuels for the next two generations.

"Using conservative estimates, energy demand will more than double by 1985, and certainly will quadruple by the end of this century."

FOURTH: Are there enough fossil fuel sources available to sustain these enormous demand increases? The answer is an emphatic "Yes!" The world's fossil fuel resources are huge—enough to last us several hundred years.

FIFTH: Why worry? Well, we had better worry, and more to the point, we had better do something. Although fossil fuel sources are abundant, a number of problems — some physical, others almost metaphysical — inhibit their development and use. Among these problems are: *Location* — of producing areas and consuming areas, often with oceans between them; *transport facilities* — mainly pipelines, tankers, and railroads; *transformation arrangements* — refineries and electric power generators; *financing* — for the huge investments required each year to make it all possible; *feasible substitutes* — nuclear, solar, geothermal, and other technologies; *pollution considerations* — clean air and water laws, and public fears and pressures; and above all, *cost* — from the raw materials to the final charge to consumers.

Despite the abundance of hydrocarbon fuels, supply dislocations and constraints on energy use or availability are distressingly possible, indeed probable. The U. S. has peaked out as an oil producer. Gas shortages in several areas already loom. Electric power generating capacity is falling behind demand. Domestic refinery capacity is barely adequate.

With these problems, worry is fully justified.

Foremost among these difficulties is the fact that the world's big energy consumers, the U. S., Europe, and Japan, each year grow more dependent on imported oil and gas, on the long sausage-link chain of jumbo tankers carrying the fuel, and on the economic arrangements negotiated between producing governments and oil companies. Japan and Europe have long since become "hooked" on Middle Eastern and North African oil. The U. S. will, unless miracles occur, be importing 15 million barrels of crude daily (half our oil consumption) by 1985. The ramifications of this relationship offer both hope for the future and reason for fear, if things go wrong.

What are some of these ramifications and implications? We can readily identify five:

FIRST: Nuclear energy as a challenger to fossil fuels is maddeningly slow in arriving. Since 1945, for example, the U. S. has acquired fewer than two plant-years per year of nuclear generating experience. Less than one per cent of our energy comes from nuclear plants. At the moment we are spending about $1 billion yearly on nonfossil fuel energy experimentation. Although we've altered the 1901 *Webster's Dictionary* definition of uranium as a "worthless metal," we have made little progress in putting nuclear power to work. If the breakthroughs do come, the world's energy problems could be solved, but they are unbelievably slow in coming. These same breakthroughs have been "just around the corner" for a quarter of a century.

SECOND: We have made even less progress in developing "far out" substitutes for fossil fuels. These include schemes to harness ocean temperature gradients, magnetohydrodynamics, fuel cell energy, solar energy, and

other potentially rich sources of power. Research goes ahead, but cost for these substitutes remains prohibitive.

THIRD: The most progress is occurring in the processing and utilization of fossil fuels. We're learning how to extract sulfur from oil, drill in deep water for oil and gas, eliminate pollution by refineries, liquefy and gasify coal, improve ocean transportation technology, develop cryogenic tankers for liquefied gas, and develop shale and tar sands resources.

FOURTH: The nations which now control major portions of the world's proven crude oil resources also have at their disposal huge quantities of foreign monetary reserves. Libya's foreign exchange holdings now exceed $3 billion. Saudi Arabia's reserves probably topped $2 billion in 1972, and five years hence could rise to $10 billion or $12 billion — more than the reserves behind the U. S. dollar. Receiving an estimated $15 billion yearly for their oil by 1980, the oil-producing nations of the Eastern Hemisphere are rapidly emerging as immensely significant forces in world trade and finance. By 1980, oil imports could create balance of payments deficits of $20 billion yearly for the U. S. The implications of this are staggering.

FIFTH: The historic role of oil companies as middlemen between producers and consumers is being challenged. Producer nations are moving strongly toward complete control of their petroleum assets, and the machinery for producing, transporting, and marketing them. While we understand and sympathize with their reasons for doing so, many knowledgeable experts feel that their actions vastly increase the chances for interruption of supply, fluctuations in price, and other crises of varying degree for the U. S. — and possibly also for their own countries.

Moderate Arab oil ministers, and there are many, must contend with political pressures from their countrymen on the matter of oil and the Arab-Israel problem. Several Arab leaders have called for the use of oil as a political weapon against Israel. This in effect means denial of oil to the U. S. — Israel's main supporter. To resist these appeals and still appear to be a patriotic Arab is not easy.

This kind of problem is not unknown on the American political scene, where it is rare to find a political figure who is willing to point to the domestic oil and gas shortage, suggest that something constructive be done about it, and assess the role of oil companies in emotionless terms.

All of this leaves the oil companies in a quandary. There is little doubt that today they are competitive (often viciously so, particularly in product markets), disagree among themselves on many matters, and face immense difficulties. They operate, U. S. academic folklore to the contrary, without the protective cushion of the fabled "cartel," and short-term surpluses and shortages caused by weather and business conditions are a persistent problem to them. To provide for oil's role alone in soaring world energy demand will require them somehow to find over $500 billion in new investment over the coming decade. Yet, their

"By 1980, oil imports could create balance of payments deficits of $20 billion yearly for the U.S. The implications of this are staggering."

modest yearly rates of return on investment (ranging from 8 per cent to 12 per cent) simply do not permit them to generate such funds — as the Chase Manhattan Bank has recently made clear. Whether their managements are up to this task will be critical. To survive, they must submit to flaying by vote-seekers, OPEC oil ministers, ecologists (both serious and hare-brained), and the squads of academics pontificating learnedly about multinational enterprise on campuses of America. Whether one likes the oil companies or not, there is at the moment no workable substitute for them in sight. The energy-hungry world, as well as the producing governments, both need them desperately. They perform a task which can hardly, at this juncture, be done by the U. S. Interior Department, the Office of Emergency Preparedness, or even by the Ford Foundation Energy Study staff.

There is still another crucial element in this international energy drama. It is ourselves. A few examples: We all want to live better electrically, requiring that more power be generated daily. We resist heroically any attempts to raise energy costs to consumers although these are still at real levels lower than in 1940. We watch with clinical detachment while the Federal Power Commission maintains gas prices at levels which discourage exploration, encourage uneconomic consumption, make import arrangements difficult to conclude and virtually guarantee a series of gas crises. Overnight our news media develop passionate concern for the mating habits of the Alaskan caribou and campaign noisily against intrusion of Arctic pipelines into this essential activity. As our energy consumption edges upward, we join conservationist groups to block power production. We continue our love affair with the eight-mile-per-gallon automobile and insist on using a two-ton car to haul one 130-pound woman to the grocery. We add mileage-cutting antipollution devices to our cars yearly, and continue to fill their tanks with leaded rather than unleaded gasoline. We overheat our houses and open windows to cool them. We applaud our elected representatives as they deride oil-producing countries and make moderation by these nations in energy matters more difficult. We vilify oil companies as part of the noble American academic and political tradition and devise ingenious schemes to prevent them from doing the job we expect them to do. We — all of us — play a self-destructive role in the energy drama.

As a corollary to these confusing elements, at least one certain development is predictable.

The cost of energy will rise. The bargain rates for all kinds of energy which Americans have enjoyed for 40 years cannot endure much longer. Recent increases averaging about 30 per cent to consumers are only the beginning. In the aggregate, they will be staggering — far greater than the estimated $100 billion which we now pay for our energy, which amounts to 8 to 10 per cent of our gross national product. Without these increases — which must be paid by you and me as the ultimate users of energy — new reserves won't be developed, pollution cannot be kept at tolerable levels, substitute energy sources won't evolve, and some *real* crises will face us.

ABOUT THE AUTHOR

Professor A. J. Meyer is an economics lecturer and associate director of the Harvard University Center for Middle Eastern Studies.

Eminent Member . . .

EDWARD C. JORDAN

by Marcia Peterman

Dr. Edward C. Jordan is presented his certificate of Eminent Membership by Executive Secretary Paul K. Hudson. Eminent Members are elected by the National Board of Directors. Dr. Jordan requested that Alpha Chapter be given the honor of conducting the initiation.

Professor Edward C. Jordan, Head of the Electrical Engineering Department at the University of Illinois, has been elected an Eminent Member of the Eta Kappa Nu Society, the highest award given. The award was presented at a dinner of the Alpha Chapter April 24th in the Levis Faculty Center on the U. of I. Campus. Professor Jordan has been a member of the Electrical Engineering Department at the U. of I. since 1945 and Head of the Department since 1954.

Professor Jordan is a Fellow of the Institute of Electrical and Electronic Engineers, and in 1968 was awarded the IEEE Education Medal. He is a member of the National Academy of Engineering. He is also immediate past chairman of the U.S. National Committee for the International Union of Radio Science.

Graduating from the University of Alberta, Canada, he received advanced degrees from the Ohio State University, which in 1970 conferred on him the Centennial Award. He taught at Worcester Polytechnic Institute and Ohio State before moving to Illinois.

From 1947 until 1954 he supervised the University of Illinois Radio Direction Finding Research Program and from 1950 until 1954 he directed Research on Antennas and Propagation in addition to RDF.

Professor Jordan is also a member of Sigma Xi, Tau Beta Pi, The American Society for Engineering Education, and the American Geophysical Union. He has served on numerous Panels and Advisory Boards for the Science Foundation, the National Bureau of Standards, and the U.S. Department of Defense.

He has authored or co-authored six technical books, and written many articles and technical papers. He has given numerous addresses throughout the world, and has served as Consultant to several industries and the U.S. Air Force.

AWARD DINNER

by
Quayne Gennaro
Vice President
New York Alumni

Photos By
Howard Sheppard
Past President - HKN

On Monday evening, March 25, 1974, distinguished members of the Electrical Engineering profession, members of Eta Kappa Nu, and their families and friends, gathered to honor the Outstanding Young Electrical Engineer of 1973. What is most outstanding about each year's Award recipient, is not only his technical achievement, but his many contributions in a wide range of endeavors. If one was to choose a single person to refute the stereotype of "engineer", the Outstanding Young Electrical Engineer would be an excellent choice.

The accomplishments and contributions of the 1973 Award Candidates, which exemplify those of past Awardees, range from athletics, music, painting and writing, to charitable, religious and political contributions to their communities. To choose one Outstanding Young Electrical Engineer from among the highly qualified Candidates is a prodigious task, for which Eta Kappa Nu is indebted to the Jury of Award.

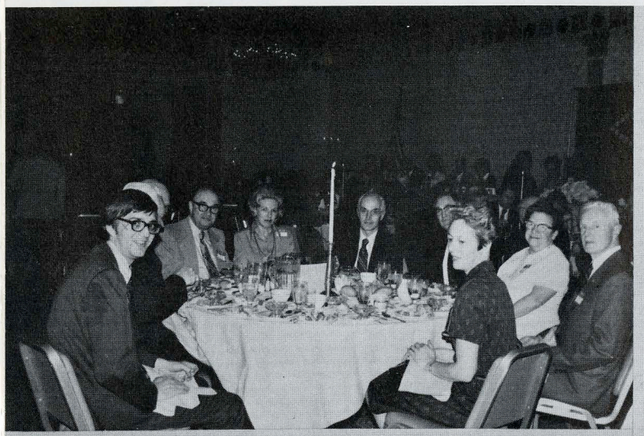
The Honorable Mention Awardees are: Gerald K. Beckman, "By virtue of this notable accomplishments in computer software development and his involvement in his community."; Douglas C. Bossen, "By virtue of his contribution in the field of computer reliability, and his participation in church activities."; and Leonard John Forys, "By virtue of his noteworthy work in the field of traffic theory and his activities in the political process."

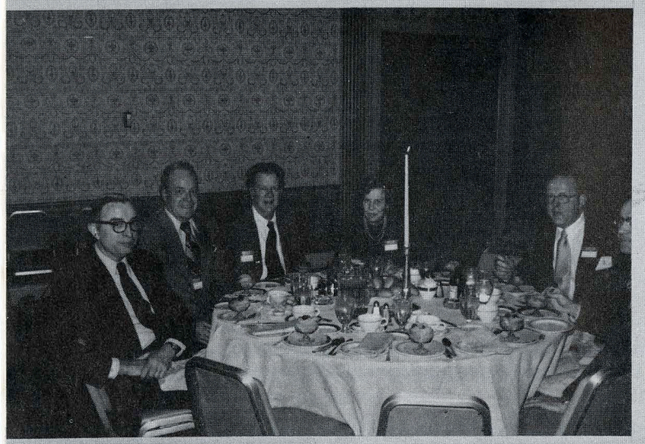
The Outstanding Young Electrical Engineer for 1973 is John T. La Macchia, "By virtue of his pioneering work in holographic memories and his leadership in community affairs." Mr. La Macchia was born in Washington, D. C., on September 19, 1941. He received B.E.E. and the Ph.D. degrees from Catholic University in 1963 and 1966, respectively. He is currently enrolled in the evening division of Indiana University, in pursuit of a Law Degree. Mr. La Macchia's professional experience includes development of optical memory devices, accousto-optic deflection of laser beams, silicon photo-detection technology and operations research. He is currently Head of the Telephone Systems Department of Bell Telephone Laboratories. In addition to his demanding career, Mr. La Macchia has held various public offices in his community, has been involved in development of youth and recreational facilities, has participated in competitive Bridge and enjoys music and the arts.

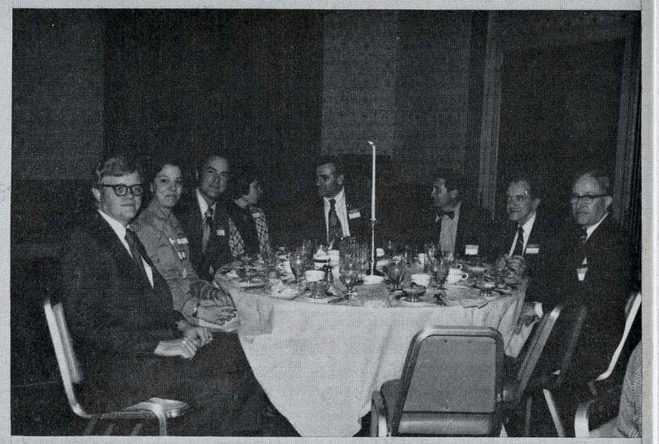
The Award Banquet, which was held in the Gold Ballroom of the Statler Hilton Hotel, was preceded by a cocktail hour which afforded an opportunity to renew acquaintances. One of the highlights of the Banquet was a classical guitar performance by Douglas C. Bossen, one of the Honorable Mentions.

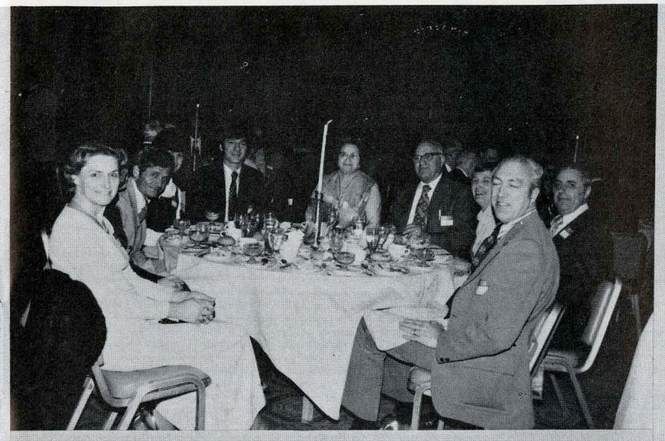
Before opening the Award Banquet Program, William E. Murray, President of Eta Kappa Nu National called upon Larry Dwon of the New York Alumni Chapter to pay a brief tribute to the late Alton B. Zerby, former Executive Secretary of Eta Kappa Nu National. Mr. Zerby, who is remembered for his long and excellent service to Eta Kappa Nu, passed away early this year.

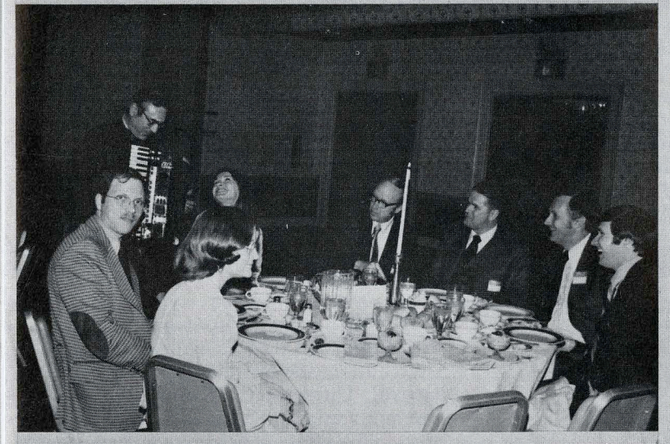
Indentification — Top photo: Winner and Honorable Mentions and their wives, left to right, Dr. and Mrs. Beckmann, Dr. and Mrs. Bossen, Dr. and Mrs. LaMacchia, Dr. and Mrs. Forys. Below: Left to Right, Dr. Bosson playing guitar; Former Vice President Holmes MacDonald, Director Anthony Chizmadia, President William Murray, Director Michael Erday; President William Murray presenting certificate to Dr. Forys.

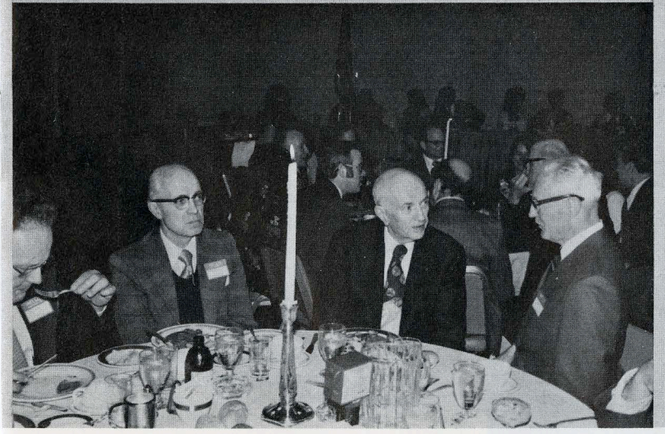












C. Holmes MacDonald

1894 — 1974

It is with deep regret that we report the passing of C. Holmes MacDonald, on September 30th. He was a former Director and Vice President of Eta Kappa Nu. In March the National Board of Directors voted him the Distinguished Service Award of the Association in recognition of his many years of valuable service. At his request the award was presented at a luncheon of the Philadelphia Alumni Chapter. The photo below shows Mr. Anthony Chizmadia, National Director (left) presenting the official certificate. BRIDGE readers have enjoyed Mr. MacDonald's articles on various subjects over the years.

C. Holmes MacDonald's affiliation with HKN began in 1916 when he was elected and inducted into the Lambda Chapter of HKN as a junior in Electrical Engineering at the University of Pennsylvania.

He was one of five people who organized the first meeting of the Philadelphia HKN Alumni Group in November, 1933. He was instrumental in efforts to maintain active college chapters in the region. In 1935, with the assistance of Roger Wilkinson of the New York Alumni Chapter, Lambda Chapter at the University of Pennsylvania was reactivated after having become inactive in World War I and the Depression Years. Continuity of college chapters at Lehigh University and Pittsburgh University was similarly due, in large measure to Holmes' efforts.

Holmes was elected a director of the National Board of HKN for the Eastern Region, 1955-56, and elected National Vice President in 1959.

Philadelphia Alumni Chapter received approval from National HKN on December 7, 1960. The first bylaws were prepared by C. Holmes MacDonald together with Drs Sun and Tav Salati.

In 1960, he was instrumental in organizing the first tri-college initiation and induction function among Drexel University, University of Pennsylvania and Villanova University. This affair is held in the Fall of each year.

After retirement from the Bell Telephone Company of Pennsylvania, he joined the faculty staff of Drexel University where he taught a course in management.

His services and counsel to BETA ALPHA Chapter at Drexel were recognized and appreciated in 1970 when the college chapter presented him with its own Distinguished Service Award.

He was a member of the Association of College Honor Societies representing HKN.

His counsel and service was appreciated by all who were associated with him.

Beta Iota Chapter

Eta Kappa Nu Association

ELECTRICAL ENGINEERING HONOR SOCIETY

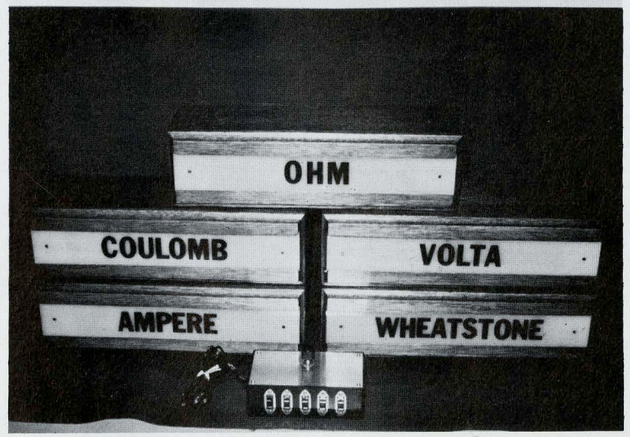
DEPARTMENT OF ELECTRICAL ENGINEERING
The University of Iowa
IOWA CITY, IOWA

BETA IOTA'S CHAPTER PROJECT

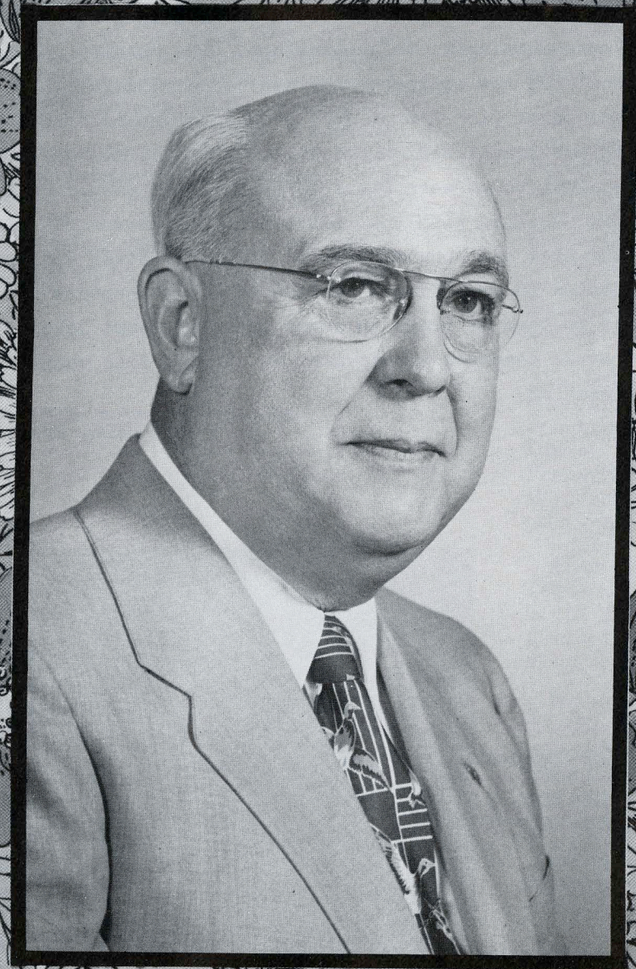
During the fall of 1973 several officers of our local chapter under the direction of former President Kenneth Bushaw, Allen Kisling, Verlin Lefler, and George Williams embarked on a project to make their initiations more meaningful to new members. The Chapter undertook the project of building new equipment for the formal initiation. Each of the five light boxes (16" X 6" X 4½") were constructed from mahogany with a plexiglass translucent front with the appropiate historical name. These light boxes were wired to be operated from a central control box in sequence with the initiation procedure. The pictures illustrate the size and construction of the light boxes and controller. We are interested in providing a service to other chapters by supplying similar boxes to them at costs to cover material, some labor, and shipping. Interested chapters are invited to contact this chapter for further information.

John Hale, President

John Hale
Beta Iota Chapter
Eta Kappa Nu
Department of Electrical Engineering
University of Iowa
Iowa City, Iowa 52240



Memorial Established In Honor Of Alton B. Zerby



As reported in the last issue of Bridge, Mr. Alton B. Zerby, who was affectionately known as *"A.B."* and *"Mr. Eta Kappa Nu"* passed away earlier this year. A.B. had served as National Executive Secretary for 23 years prior to his retirement in 1958. He also served as National President, Editor of Bridge, and several other stations. Over and above his extensive and valuable service to the Association, he was known by one and all as a very kind, cordial and altogether worthwhile person. When sorrow comes, family ties often are strengthened, and this is as true for the Eta Kappa Nu family as it is for private families. Several members of the Eta Kappa Nu Official Family — past and present National Officers and Directors — and their wives, decided to express their sorrow in a tangible way by establishing a memorial to Mr. Zerby. As we all stand equal in the sight of the one Father who is above us all, it was decided that all contributions would be equal. Fifty dollars each was decided upon. Only the proceeds of the fund will be used, thus making the Memorial perpetual. The present Board of Directors will consult with the Donors before determining the exact nature of the Memorial. The details will be reported in a future issue of Bridge.

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Distinguished Service Award To . . .

CLIFFORD A. FAUST

by
Carl Koerner
President 1958

Clifford A. Faust, Nu '27, has been designated the recipient of Eta Kappa Nu's Distinguished Service Award, the highest award for service to our Association.

In a letter to Brother Faust, National President Bill Murray wrote as follows: "It is my pleasure and privilege to inform you that you have been designated by the National Board of Directors of Eta Kappa Nu Association to be the recipient of our Distinguished Service Award.

"This well-deserved recognition of your many years of dedicated and valuable service would surely have been conferred many years ago. However, this award has been in existence for only three years. As you are probably aware, it has been previously granted only to Alton B. Zerby and Roger Wilkinson. . . . .

We are particularly pleased that the Board of Directors has recognized your unique contributions to the life and growth of Eta Kappa Nu during the very difficult period of our Association and our national experience during the 1930's. That you and those associated with you did your duties exceedingly well is proven by the successful transition of Eta Kappa Nu through that period and its growth to the present level of 133 chapters and over 56,000 members, with an estimate of more than 90,000 total initiated."

Clifford A. Faust is presented with Distinguished Service Award Certificate by National President Bill Murray.

The presentation was made by Brother Murray at a Los Angeles Alumni Chapter sponsored gathering in San Marino, California on December 8, 1973. Carl Koerner, friend of Cliff's since the early 30's, was honored to present some highlights of Cliff's long and outstanding role in Eta Kappa Nu.

Cliff was born in Bellevue, Iowa in 1905, was raised there, and graduated from Iowa State University in 1927 with honors after a leading role in many extra-curricular activities. His post-graduation service for Eta Kappa Nu started in 1930 and August 1934 marked the start of a term as National Vice President and two terms as National President. Just prior to this he had served in all of the offices of the New York Alumni Chapter, including chapter president in 1933-1934. He served on the National Advisery Board in 1937-39.

Those were the years of the Great Depression but this never daunted Brother Faust. Though employed by Mc Graw-Hill Publishing Company, his awareness of the problems of the unemployed led him to organize and chair the New York Alumni Employment Committee, which provided both help and solace to so many Eta Kappa Nu and other engineers seeking employment at the time. The same successful New York plan was adopted by other HKN alumni and college chapters and by several engineering organizations, benefiting hundreds of men looking for positions.

As Cliff took National office, he found that Eta Kappa Nu had not added a chapter in the preceding five years ant that it was at a standstill. Recognizing the need for fast, strong, constructive measures, he quickly went to work, developing a long range expansion program with the help of A. B. Zerby and others.

As the first step, he made an exhaustive survey of all colleges in the country with accredited electrical engineering departments (137). This survey obtained E. E. graduation figures for 8 years and covered curricula, instructor qualifications, facilities, and other points for determining whether or not an HKN chapter was warranted.

He and A. B. Zerby then wrote numorous prospective institutions about Eta Kappa Nu and planned visits and approaches, offtimes 'til 2:00 or 3:00 in the morning. Visits were coordinated with the regular visitation program and made mainly by the dedicated Executive Secretary, A.B. Zerby. Cliff's initiative reinspired and reinvigorated the whole fibre of Eta Kappa Nu. Vigorous restoral of college chapter growth — one of the main life-giving consequences — has continued from 1934 right up to the present. During his terms on the NEC, five chapters were installed — at Drexel, Brooklyn Poly., Michigan Tech., Pittsburgh and Michigan.

The Bridge Life Subscriber Plan was also developed with Cliff's contributions of time and talent. Its main purpose is to keep a larger number of Alumni informed of HKN affairs, to retain their interest and to benefit them for the rest of their lives. The Bridge of Eta Kappa Nu, Volume 31, Number 6 (1935), Directory Number, shows Cliff to be Life Subscriber Number 5. Incidentally, that same issue lists him as National Vice President and interestingly shows Alton B. Zerby as Executive Secretary and Roger Wilkinson as Chairman of the National Advisory Board (now the Board of Directors). The latter two, of course, were the first and second recipients, respectively, of the Distinguished Service Award.

National President Bill Murray describing Distinguished Service Award. Freeda Faust in foreground.

L. to R.: Director Bob Macmillan, Award recipient Clifford A. Faust, National President Bill Murray.

In this period Cliff initiated and helped develop the much sought-after College Chapter Activities Award, sponsored by the New York Alumni Chapter. We all know about this award and the Silver Plaque given in recognition of the outstanding chapter annually. We are perhaps not aware of Cliff's leading part in its development.

Not long before Brother Faust started his terms on the National Advisory Board, he joined the Ohio Brass Company and moved to Mansfield, Ohio. Here he and his devoted wife, Freeda, were married. In 1937, Cliff received Honorable Mention in the Eta Kappa Nu Recognition of Outstanding Young Electrical Engineers "by Virtue of His Brilliant Work in Editorial and Advertising Fields, and His Exceptional Direction of Engineering Organization for the Benefit of His Fellowmen."

Some years later, the Fausts moved to Southern California, where he was gladly claimed as a local son. It seems that although he attended three years of high school in Belle-

vue, Iowa, he had graduated from Pasadena High School, California.

In Southern California, he soon took his characteristic position of contributing time and talent, assisting in the progress of Los Angeles Alumni Chapter, as well as the national association. Cliff is an Honorary Life Member of this chapter.

Cliff made many contributions to the Bridge over a period of at least eight years, including articles on how to find employment, the survey of 137 E.E. schools, ways to increase Alumni chapter meeting attendance, Iowa State, and member biographies. He served in the official capacity of Associate Editor for two of these years. He was a member of the Constitution and Statutes, Fellowship, and Publicity national committees, helped to write three handbooks, and made other contributions to our association far too numerous to detail here. In addition, he and his wife, Freeda, are among the finest people one could know.

The gathering honoring Freeda and Cliff was held at the lovely San Marino home of Peter Pfeiffer and his attractive wife, Mavis. Pfeiffer is Vice President of the Los Angeles Alumni Chapter. Maurice Fee is currently President, Norman Nise, Secretary, and Alan Felzer, Treasurer. Time and space does not now permit, but much more should be said about this very active chapter, with its multitude of contributory activities and social events. It is here that the annual award for the Outstanding Electrical Engineering Student was conceived and implemented.

It is now many years since Cliff, soon after leaving the company then employing him, suffered a disabling illness. Characteristically, he and Freeda reacted courageously and today their fortitude and determination have been rewarded with a once again active role in life. Cliff's retirement in Sun City, California, now means travel, apartment management duties, friends and family, including five grandchildren. Those who know him well, know without doubt that Cliff is still pursuing his never ending quest to be of service to Eta Kappa Nu, his community and his fellow man.

Carl Koerner, Past President 1957-8 with Cliff Faust and Cliff's wife, Freeda.

Peter Pfeiffer, Vice President, L.A. Alumni Chapter at whose home the Fausts were honored, with Alumni Chapter President Maurice Fee.

Zeta Xi Chapter . . .

SOUTHEASTERN MASSACHUSETTS UNIVERSITY

ROBERT LIVINGSTONE
Chapter President

Our chapter installation was held February 8, 1974 on the SMU campus. The chapter certificate was presented to Dean Gordon Anderson of the SMU Engineering Department by Mr. Tony Chizmadia, the East Coast Representative for HKN National Headquarters.

The banquet held in honor of the occasion was attended by present members of HKN plus six new members who had been initiated earlier that afternoon (Stephen H. Cory, Donald R. Czekanski, Stephen D. Fyfe, Richard Savoie, Dr. Gilbert Fain, and Elliott Simons).

Dr. Allyn Vine of the Woods Hole Oceanographic Institute, a designer of the mini-sub "Alvin" which located a lost H-bomb off the coast of Spain some years back, was the guest speaker. He spoke on the subject of technology being only as useful to society as we choose to make it.

A pleasant evening was had by all and now the chapter is in full swing.

Recently, our chapter served as guides and project demonstrators for a large group of local high school seniors touring the Engineering Department at Southeastern Massachusetts University.

In the works for the end of the semester is a New England style clamboil for the E.E. faculty, members of both I.E.E.E. and HKN, and their families.

Front Row [L to R]: Dr. Allyn Vine, Anthony Chizmadia, Installation Officer, Dr. Chi-Hau Chen, Robert Livingstone, I - Chang Lin, James Reid. Second Row: Dr. Gilbert Fain, Kurt Gent, Dr. Peter Rizzi, Stephen Fyfe, Richard Savoie, Anthony Felix. Third Row: William Schofield, Dr. Hans van den Biggelaar. Back Row: Robert Helgeland, Thomas Casey, Ronald Boucher, Dr. John Greaves, Donald Czekanski, Prof. Lennine Gonslaves.

[Left to Right] Robert Fisk, Luis Balceda, George Moser, G. K. Purkayastha, John Strong, Professor Michael Erday, Tim Watts, Vince Shugrue, Thomas Miller, Scip de Kanter, Richard Enstice

FLORIDA INSTITUTE OF TECH.

by Vincent Shugrue

The Zeta Epsilon Chapter of the Florida Institute of Technology was the host for the Southeastern Regional Visitation held on April 5th & 6th. The welcoming remarks, given by Zeta Epsilon Chapter president Vincent Shugrue, were followed by a roll call and an introduction of delegates (1:15). Those attending the Visitation included:

Xi Chapter, Auburn University — Tim Watts, Epsilon Kappa Chapter, University of Miami — George Moser and John Strong. Epsilon Upsilon Chapter, Tuskegee Institute — Professor Michael Erdey (Faculty Advisor and representative from National Headquarters). Zeta Epsilon Chapter, Florida Institute of Technology — Dr. Robert Kemerait (Faculty advisor), Vince Shugrue, Robert Fisk, Denis Catalano, Scip de Kanter, Wayne Thomas, Richard Enstice, Dr. Harry Weber, Alex Shaw, Luis Balceda, G.K. Purkayastha, Thomas Miller, and Robert Gindhart.

Professor Erdey then spoke of the necessity for the existence of organizations such as Eta Kappa Nu. He said it was the role of Eta Kappa Nu to provide a healthy environment for creative activity.

The presentation of Chapter reports and a discussion period then followed. Professor Erdey mentioned the many benifits that an Eta Kappa Nu Alumni Chapter could provide. Both the University of Miami and the Florida Institute of Technology expressed strong interest in starting Alumni chapters in their areas.

Eta Kappa Nu at Auburn University sponsors the Electrical Engineering Senior's Club, the purpose of which is to provide an opportunity for electrical engineering students to help their fellow students and to encourage this type of service by recognizing those graduating seniors who have outstandingly served their fellow Auburn E.E. students. Eta Kappa Nu at the Tuskegee Institute publishes the *Tuskegee Engineering Review*, which is the voice of the Tuskegee Institute Engineers.

All chapters provided tutoring services and some type of electrical engineering social get-together. Picnics and sporting events were common.

Unanimously, each chapter reported that the faculty advisor was more than adequately performing his job, and in most cases received support and assistance from other faculty members. It was also concluded that a better method of public relations was needed for both Eta Kappa Nu and electrical engineering as a profession. The meeting was adjourned at 4:30 p.m.

Members of the host chapter then conducted tours of the beautiful Florida Institute of Technology campus. From 5:30 to 6:30 cocktails were served at the roof-top suite of the Crawford Science Building. This

▶ 23

MERRY MOMENTS WITH MARCIA

Wrong Stone—"My husband didn't leave a bit of insurance."

"Then where did you get that gorgeous diamond ring?"

"Well, he left $1,000 for a casket and $5,000 for a stone. This is the stone."

* * * *

Sign on a desk in an office: "Lead, Follow, or Get Out of the Way."

* * * *

Keep It Up!—He was celebrating his 100th birthday. "To what do you attribute your longevity?" inquired a curious friend. Pausing for a moment, the old fellow said proudly, "I never smoked, never drank alcohol, never overate, and went to bed by 10 and was always up by six."

That's certainly to be admired," said the friend, "but my grandfather did the same thing and he died at 60."

"He just didn't keep it up long enough."

* * * *

It was a busy evening at an airport ticket counter. The airline agent, baggage tags in hand, pointed to the luggage on the scale and asked a passenger, "Are these your bags, Miss?"

"No," was the reply. "They're my sister's, but she said I could use them."

As we were borrowing customs from other cultures, who was the stupid fella who passed up the siesta?

* * * *

Grandma tells us about the jam sessions that were held only once or twice a year during the strawberry and blackberry seasons.

* * * *

Freshman Petroleum Engineer—"Isn't it great how these service station people know just where to set up their pumps to get gas?

* * * *

Our computer has been coming up with snap decisions ever since someone dropped a rubber band into it.

* * * *

Robinson Crusoe was the only person who got all his work done by Friday.

* * * *

Male Cows have calves, too.

* * * *

Bambi does stag movies, but only for the doe.

* * * *

Tramp steamers follow the buoys.

* * * *

I was born free too, my dad's a doctor.

* * * *

Does Ma Bell use Dial Soap?

* * * *

Have modern women swapped dishpan hands for computer fingers?

by Marcia Peterman

Who's Who in Eta Kappa Nu

HERBERT J. SUMMERS

by
Clifford A. Faust
Past National President

"Overwhelming" really underdescribes the activities of Herbert J. Summers, Upsilon '26 — adventurer, oceanographer, geologist, research scientist, inventor, scuba diver, explorer, artist, traveler, conservationist, etc., etc. He has lived an exciting life and compiled an enviable record of achievements to date — and he's still in "overdrive"!

Eta Kappa Nu is fortunate that this "dynamo" has served the Association in many capacities for 46 years (so far). Herb graduated from the University of Southern California in 1923 and was inducted as an alumnus member when Upsilon was installed in 1926. He has maintained a continuing interest over the years, attending initiations, entertaining HKNs, working on committees, organizing meeting, and planning activities.

In 1934, he accepted the Presidency of the Los Angeles Alumni Chapter, devoted two terms to developing a live, well-planned program, and organized an HKN employment service in the great depression. He has been on the Advisory Board since 1946, and he served on the committee that prepared an Alumni Chapter Handbook, distributed nationally in 1957.

At the national level, Herb represented the Western Region on the National Advisory Board for two terms; made official visitations to chapters in Arizona and New Mexico, and was Chairman of the National Publicity Committee, which prepared a complete manual for all chapters. As a member of the National Constitution & Statutes Committee from 1956 to the present, he assisted on an extensive revision of the entire C & S and helped interpret and clarify many sections.

To permit the inclusion of many interesting facts that otherwise would be omitted to save space, the following portions are presented in synoptic form:

Adventures and Hobbies

RAPIDS —
Made famous Georgie White rubber raft trips twice through Marble and Grand Canyons and far into Lake Mead, totaling 325 miles. Also ran rapids in Snake, Yampa, Green and upper Colorado Rivers, plus Glen Canyon before it was drowned by Lake Powell.

MEXICO —
Drove to Guadalajara, Mexico City and numerous places in Sonora and Baja California. Made two yacht trips on Pacific, one all the way to Acapulco.

ABROAD —
Traveled widely in Europe.

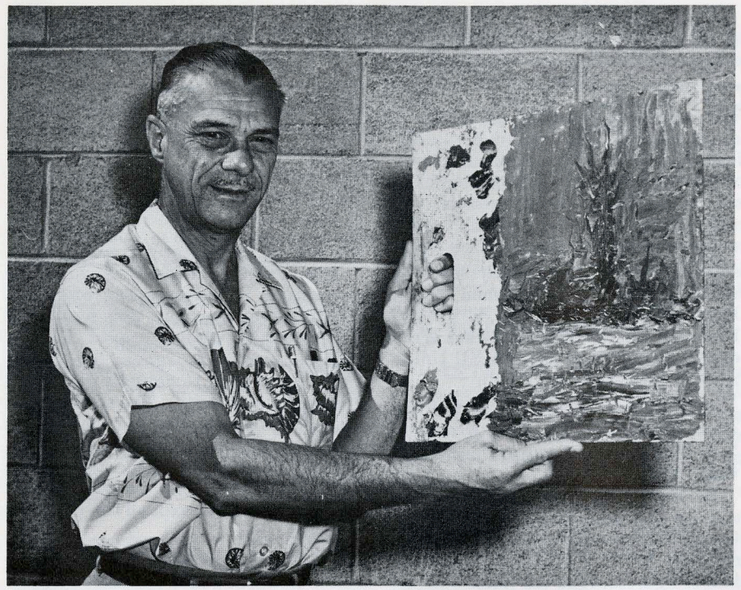
CAMPER VAN —
Crossed U.S. and made many van trips to mountains and desert.

ISLANDS —
Visited several islands off Southern California coast. On numerous occasions, took parties of geologists, botanist, ornithologists, zoologists, archaeologists and other scientists on exploration trips to San Clemente Island. Helped organize Sierra Club "Cabrillo Group" to promote conservation mainly and for enjoyment of islands.

SCUBA DIVING —
Practice 10 years in geologic research on ocean floor. Made about eight dives of 100 to 150 feet in Scripps submarine canyon with Navy scientists, and innumerable dives off Santa Catalina and San Clemente Islands and the coast.

MOGOLLON (Muggy-Own) —
Acquired 1900 miner's cabin in Mogollon, a once booming gold and silver city of 6,000 (now a ghost town of 6) in a mountainous wilderness area of New Mexico. Visited two or three times a year since 1967 and during stays of two to four weeks made extensive alterations and additions, including a rebuilt well and complete electrical system.

ART —
Started in 1930 and still a favorite avocation. Studied several years with individual artists, and does realistic and abstract works in various media, both in field and studios (has two at rear of Pasadena home). Newest development is pencil sketching landscapes and interpreting them in wood carvings.



Herbert J. Summers with seascape he painted underwater while diving off California coast.

BIKINI —
While in U.S. Navy on Bikini Atoll in 1946, organized sketching group, each man stationed on a ship deployed in different directions from atomic bomb detonation (No. 4 in the World). Artists made quick sketches synchronically every few minutes as cloud ascended. Assembled all drawings later that day to obtain early conception of blast effects.

OTHER HOBBIES —
Took course in movie making. Films and produces travel movies with accompanying narration on tape. Has good stereo system and collection of classical records and tapes. Enjoys good music. Sand bass in Los Angeles Orpheus Club 12 years. Attends Hollywood Bowl events and concerts and operas at Los Angeles Music Center. Helps wife refinish furniture, especially antiques.

FAMILY —
Joined on most of the above adventures and encouraged or helped on many hobbies by his charming, talented and darling wife, Virginia (active for years in Los Angeles Alumni Chapter Women's Auxiliary and other HKN affairs). They have son, Ivan, daughter, June and four grandchildren.

Education and Teaching

DEGREES —
BS in Electrical Engineering from USC, where he was class officer in 1923. Returned to USC in 1960, studied Geological Oceanography, and earned MS in Geology.

TEACHING —
Taught Oceanography at Naval Reserve Officer's School and University of California extension for 5 years to 1970.

Professional and Navy Career

1923-42 —
General Electric at Schenectady and Los Angeles (sales), Los Angeles County Engineer Office, City of Torrance, self-employed engineer and U.S. Engineer Office.

1943-47 —
Officer, U.S. Naval Reserve active. Engineering specialist on battle-damaged ships at west coast shipyards. Also radiological safety officer for Bikini atom bomb tests.

1948-49 —
City of Bell city engineer.

1950-65 —
U.S. Navy lab, Pasadena. Civil Service general engineer and oceanographer until retirement.

1965 on —
Conducted independent research. For Navy, organized and conducted study of internal waves in ocean, using ten Naval and private ships. Also researched military uses of submarine canyons, employing Navy, Los Angeles County and USC research ships. Later, in 4-year USC project financed by ONR, studied sand transport and significance of micro-relief across sand sheets and dunes on deserts and sandy ocean bottoms. Conceived idea, developed many unique instruments for this work, and carried out program with help of USC graduate students.

PRESENT —
Still a registered professional engineer in California (since 1930), and in the USNR, retired, as Captain. Maintains close contact with USC Geology Department.

Authorships and Honors

ARTICLES —
Wrote technical papers on oceanographic instrumentation, results of internal wave study (senior co-author), new camera system for ocean use, bearing power of soils for foundations, etc., published in *Journal of Geophysical Research, Journal of Sedimentary Petrology, Marine Research,* and other journals. Writing article now for a scientific publication on high-speed photography applied to geology.

HONORS —
Memberships in Sigma Xi, scientific research honorary, and Sigma Gamma Epsilon, earth sciences honorary. Navy commendation for work at Bikini. Past president of Artist Associates in Pasadena. And, as a fitting conclusion, many important offices and responsibilities in Eta Kappa Nu.

CHAPTER NEWS

BETA GAMMA CHAPTER, Michigan Technical University— The Beta Gamma Chapter began the fall quarter teaching the annual sliderule course. The members taught approximately 300 incoming students how to use the various functions on their sliderules.

During the winter quarter we initiated 12 new members bringing the membership up to 19 members. After the formal initiation, we had a luncheon at the Douglas Houghton House.
by Clayton J. Larson

BETA NU CHAPTER, Rensselaer Polytechnic Institute— Following the first of two Spring initiations smokers, a discussion was held between Mr. Larry Dwon and officers and other members of Eta Kappa Nu on the future activities of this local chapter. As a result of this meeting, preparations are being made for a regional visitation among the colleges of Cornell, Clarkson, Syracuse, Union, and R.P.I. for an interchange of ideas between HKN members of these schools.

At the same meeting, it was suggested that future terms for officers be extended from the current semester terms to yearly terms and that a committee be formed to foster interest in the Chapter and its projects.

Finally, forums for fellow students concerning the procedures recommended for interviewing and writing resumés are being considered for other activities.
by Richard M. Leess

GAMMA ZETA CHAPTER, Michigan State University— The Gamma Zeta chapter at MSU is supplementing the education of its members through projects and field trips. Members visited the university cyclotron fall term and fiddled with the cyclotron computer. A trip to the MSU Power Plant is planned for March. We also plan to participate in the spring EE open house.

Gamma Zeta has designed a digital clock. Each member was responsible for a different aspect of the design. Construction will begin in the spring and the finished product will serve as a demonstration model for curious EE's.

Last spring's HKN picnic was a resounding success, especially since EE students and faculty combined to whip Physiology Dept., 21 — 12, in softball. Potential HKN candidates were treated to a pizza dinner at the MSU Union. A good time was had by all.

Officers are Dan McDonald, President; Jeff Wrinkle, Vice President; Tom Boucher, Treasurer; and Larry Core, Secretary.
by Steven Schwarz

GAMMA CHI CHAPTER, New Mexico State University— Gamma Chi Chapter started the semester off by setting up an information booth at registration for students new to the EE department. Ongoing projects included providing free tutoring services for undergraduates, taking the class evaluation survey at the end of the semester, maintaining a file of EE alumni and their employers, and taking the Alumni Survey which is done every three years. The pledges organized a work party, and for their pledge project they put a clock and a bookcase in the study hall after giving the room a thorough cleaning.

The guest speaker for the banquet was Dr. Bradley A. Blake who gave a humorous speech relating anthropology to the development of the EE department. The Outstanding Pledge was Hal Sierra, the Outstanding Sophomore was Janet Ahren, and the Outstanding Freshman was Kent Davenport. Keys, which were cast by the pledges, were presented to twelve graduating seniors.
By Barret Lawshe

GAMMA THETA CHAPTER, University of Missouri-Rolla— The spring semester has been highlighted by the completion of the manual dexterity project for the Rolla Diagnostic Center. These machines, which were designed, built, and donated by our chapter, were well appreciated by all those concerned with the development of handicapped children in this area.

Work has begun on a study room to be located in the basement of the E.E. building. The funds for this project were donated by one of the firms in the area, and the plans were drawn up by one of the chapter's committees.

Our chapter cooperated with the local Rolla Boy Scouts and offered a merit badge program. This four week program (the pledge project for the spring semester) gave the Boy Scouts a chance to actually build and test various circuits. The scouts were supervised by members of the chapter and basic lectures were given. Upon completion of a test, the scouts were awarded their merit badges. Plans are being made to expand the program for next year.

On March 9, eighteen undergraduates were initiated into our chapter. The initiation banquet was well attended by parents and dates of both new and old members.

A cash award was presented to the student in the Southwest Regional Science Fair whose project demonstrated an avid interest and high proficiency in the field of Electrical Engineering.

Some of the smaller projects include the beginning of a computerized Graduate and HKN Directory, organizational orientation meetings for freshmen, and the sponsorship of a student-faculty conference for the sole purpose of improving the Electrical Engineering Department.

One hundred and eleven Lab Insurance Policies were sold this semester, providing funds for the awards and projects undertaken this semester.
by Vincent Saporite

DELTA KAPPA CHAPTER, University of Maine— We started off our activities this spring by setting up exhibits at the University's Open House held during the vacation week of March 30 — April 6. The exhibits were manned primarily by pledges who were fulfilling pledge requirements.

Delta Kappa's spring initiation took place on April 16; three new brothers were initiated, all undergraduates.

This May, our chapter took on the task of conducting course evaluations within our department on campus under the guidance of the chapter's advisor. The evaluation consisted of a comprehensive form which was distributed to all Electrical Engineering students after being prepared primarily by our chapter president.

On May 14 Delta Kappa held its last meeting of the year. The highlight of the meeting was the presentation of awards to the two OUTSTANDING SOPHOMORES from the electrical engineering department. Two were selected instead of one because they had identical grade point averages.

DELTA OMICRON CHAPTER, University of New Mexico— We have been very expeditious in school activities this last quarter by performing its customary role in community affairs (operating its electronic message board at the University Basketball Arena during home games), and by expanding its membership to a total of thirty-nine.

The membership of this organization is presently considering augmenting its message board facilities with a additional display so that future messages will be visible to the entire area. Dr. Ruben D. Kelly, the chapter advisor, approached the Lobo Booster Club with this proposition, hoping that financial assistance for the project would be supplied by the club. The response of the Boosters was favorable, but no final action is going to be taken until the remodeling of the Arena is completed. The U.N.M. Athletic Department has planned an increase in the seating capacity of this structure, and the manner in which the construction is to proceed may dictate the relocation of the present message board. However, once the project is complete, the Delta Omicron fraternity will pursue its drive for an expanded message board facility.

The highlight of this society's social activities was the initiation banquet held at the Sundowner Motor Inn in Albuquerque on March 30, 1974. At this event, twenty-one new members were installed. During the banquet, this year's candidate for "Outstanding Electrical Engineering Senior" was announced. Michael Breheny was selected in recognition of his outstanding scholastic achievements and professional promise. The dinner was followed by an interesting recitation on the Spanish woman delivered by Dr. Sabine R. Ulibarri, the Department Chairman of Modern and Classical Languages at the University of New Mexico. The chapter President, Hank Adams, then presented appropriate awards to the chapter's faculty members in recognition of their devotion to the student and school. Dr. Ruben Kelly was presented a plaque for his distinguished service to the society as advisor for five years.

Plans for summer activities were discussed by the new officers at the last business meeting. The main topic of immediate concern was the status of the message board pertaining to possible damage during construction work at the Arena. Several members were assigned the task of protecting the fellowship's interests in this matter during the summer recess.
by Frederick Ricker

ZETA ETA CHAPTER, Brigham Young University— Recently, five new members were initiated: Jim Jones, Jay Tolman, Jim Perry, Warren Christensen and Richard VanEpps.

Some of the activities that we have been considering at milk-and-doughnut get togethers are: A book exchange solely for engineering students who want to exchange engineering texts; and a tutoring program of some kind to help engineering students, particularly those who are just starting out in engineering. Extra work is needed, however, to fully develop these ideas into programs beneficial to the students.

We have had a great time together in "Zeta Eta" and wanted to share with you a few of the things we have been doing lately.
by Greg Rauch

was arranged by Dr. Harry Weber, the Dean of Science and Engineering. Also attending were professor Erdey's family, Eta Kappa Nu Alumni from local industry, and Dr. Walter Nunn, Dr. Richard Hu, Dr. John Hadjilogiou, Dr. Kemerait, and Dr. Weber of the Electrical Engineering faculty at the Florida Institute of Technology.

Dinner was at 7:00 pm and was held at a fine local restaurant, The English Pub.

The following morning, Saturday, a tour of the Cape Kennedy Space Center took place. Also, special lectures arranged for the Eta Kappa Nu participants were held. Topics included the recently completed Skylab missions, and the upcoming Space Shuttle and the joint Soviet-American mission.

DIRECTORY

Executive Council

William A. Klos, President, Electrical Engineering Department, University of Southwestern Louisiana, Lafayette, Louisiana.

Chalmers M. Butler, Vice President, Electrical Engineering Dept., University of Mississippi, Oxford, Mississippi.

Paul K. Hudson, Executive Secretary, Department of Electrical Engineering, University of Illinois, Urbana, Illinois.

Directors

William H. Pickering, Jet Propulsion Lab, Pasadena, California.

Earl D. Eyman, Department of Electrical Engineering, University of Iowa, Iowa City, owa 52242.

Anthony A. Chizmadia, 4110 Locust Street, Philadelphia, Pa.

Michael R. A. Erdey, Electrical Engineering Department, Tuskegee Institute, Tuskegee, Alabama 36088.

Robert W. Lucky, Bell Laboratories, Holmdel, New Jersey.

Marcus D. Dodson, 9302 Grindlay St., Cypress, California.

Gerald R. Kane, Electrical Engineering Department, University of Tulsa, Tulsa, Oklahoma.

Earl L. Steele, Electrical Engineering Department, University of Kentucky, Lexington, Kentucky.

Committees

CONSTITUTION AND STATUTES—Warren T. Jessup.

MOVIE—J. E. Farley.

OUTSTANDING YOUNG ELECTRICAL ENGINEER AWARD—Harlan J. Perlis.

OUTSTANDING STUDENT AWARD—Lawrence Hamilton

OUTSTANDING PROFESSOR AWARD—Anthony Chizmadia.

ACHS REPRESENTATIVE—C. Holmes MacDonald.

OUTSTANDING CHAPTER AWARD—Alan Lefkow.

PUBLICITY—Berthold Sheffield.

VISITATION—Larry Dwon.

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by _____ (Mo., Yr.)

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GPA is _____ out of possible _____

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