

The secret society that never was

Founded in the fires of creative disagreement, Eta Kappa Nu soon found its niche, and this month celebrates its 75th anniversary

On Sept. 23, 1904, two students at the University of Illinois met on the steps of the campus engineering building to discuss forming Eta Kappa Nu, the national electrical engineering honor society. One of the students, Maurice L. Carr, later recalled that their one enthusiastic agreement had been that such a society was needed; their views on exactly what the organization would achieve varied widely. Two days later, this time in front of University Hall, Carr and his colleagues, by then numbering five, agreed to form the association.

Five weeks later the founding group was complete. Besides Mr. Carr, it consisted of Charles E. Armstrong, Ralph E. Bowser, Carl K. Brydges, William T. Burnett, Hibbard S. Greene, Frank R. Winders, Edmund B. Wheeler, Milton K. Akers, and Fred D. Smith.

The group's first concept of the Eta Kappa Nu Association was that it would be absolutely secret. "No one but members would even know who belonged," Mr. Carr recalled 25 years later in the November 1929 issue of *The Bridge*, the association's magazine.

But this was rejected immediately in favor of inviting all electrical engineers to join, creating what would almost amount to a union and certainly eliminating any element of mystery. Then, for several reasons, this proposal was knocked down. If every engineering student on the campus were invited to join, the reasoning went, the society would lose exclusivity—and thus fail to impress people. And also, college men as a group, Mr. Carr believed, were "too ambitious to make good union material."

The association settled finally on qualifications for membership that exist to this day: The student must be in the upper fourth of his junior electrical engineering class or the upper third of his senior class, qualifications which are sometimes tightened.

Other qualifications against which the prospective member is measured relate to the following questions:

"How does this man conduct himself in situations which are strange to him? How does he proceed to use his equipment and tools in performing his work? Does he have ingenuity? Are his ideas practical and feasible? Does he have the necessary imagination for visualizing the complex problems of electrical engineering and for seeing new solutions to those problems?" The use of the masculine pronoun in these questions is traditional, and not meant to exclude women, many of whom have been elected to the society.

As for the purpose of the organization, what emerged over the years was an amalgam of many suggestions. The association has proved to be an incentive to electrical engineering

students to excel by giving awards to students and working engineers for achievement. It has established rapport among faculty members, students, and alumni. It has urged engineers to become well-rounded by helping others and encouraging an interest in culture. And it has helped engineers find jobs.

On Oct. 28 next, at least 150 celebrations will be held throughout the world to commemorate the 75th anniversary of Eta Kappa Nu. One hundred forty-five of the luncheons or dinners will be held on or near campuses by members of local college chapters. Five alumni chapters in the United States will also honor the day, as will the association's first foreign chapters—one at the University of Southampton in England and the other at the Instituto Tecnológico de Buenos Aires in Argentina.

Changes to fit the times

The association's goal has changed throughout the years to fit the times, three long-time active members of Eta Kappa Nu agreed when they met recently to talk about the anniversary. The three were Berthold Sheffield, national publicity chairman for the association, Larry Dwon, the official historian, and Roger I. Wilkinson, founder of the Outstanding Young Electrical Engineer Award.

During the Depression of the 1930s Eta Kappa Nu's goal—especially in the alumni chapters—was to help its members find work, the three recalled, adding that the period was one they remembered with much warmth.

"The New York Alumni Chapter members got together every Tuesday night in 1935," Mr. Wilkinson said. "We met in a Horn & Hardart basement, where we'd have something to eat and then talk until they chased us out."

Sometimes the group met in the lobby of the engineers' building on West 39th Street in New York. "We were members and felt we had a right to sit in the lobby and talk," Mr. Wilkinson said. The subject was, of course, jobs. "We all kept an eye out for each other for job openings."

Mr. Dwon expanded on the recollection. "We had many philosophical discussions on the subject of work in general," he commented. "Some of the men believed that even in good times, the only way to get ahead, to get salary increases, was to job hop. I, on the other hand, always felt you owed at least one year to an employer before moving on. Others favored a long marriage with a single company."

Was a philosophical agreement ever reached?

"No," Mr. Dwon said. "It always remained a personal point of view for each of us. But exchanging our views during these difficult times was helpful."

Dinner was not always part of the Depression meetings. According to records kept by Mr. Sheffield, one meeting in New York was held in an unused room in Police Head-

John F. Mason Contributing Editor

Honors from Eta Kappa Nu

Following are citations given every year by Eta Kappa Nu:

Outstanding College Chapter Award—To stimulate interest in chapter activities and recognize high attainments, the New York Alumni Chapter gives this award to an undergraduate chapter. The chapter that accomplishes the most to enhance its value to its members, to the national association, and the university—particularly the electrical engineering department—is judged the winner.

Outstanding Young Electrical Engineer Award—Conceived by Edmund B. Wheeler, a founder, and Roger I. Wilkinson, a former president, this award has achieved for Eta Kappa Nu more recognition among educators, professional societies, companies, and government agencies employing electrical engineers than any other activity. The winner must be less than 35 years old and less than 10 years from his baccalaureate degree in E.E. on May 1 of a given year. It is intended for the "whole person" type, who excels not only in his professional pursuits but also in community, religious, cultural, and other activity areas.

Freshmen and Sophomore Prizes—Almost every chapter gives a prize to the EE student with the highest average at the end of his freshman or sophomore year.

Alton B. Zerby Award—One electrical engineering student in the United States is chosen as "the most outstanding." The winner gets a trip to a National IEEE meeting.

C. Holmes MacDonald Award—To recognize excellent teaching of EE students, to improve faculty-student-alumni relations, and to promote the best interest of Eta Kappa Nu and the colleges that have association chapters, this award is given to an

outstanding young electrical engineering professor. Offered by the Philadelphia Alumni Chapter, it was first presented in 1973. The recipient is honored at a luncheon held by the association's national board of directors in conjunction with a major IEEE convention.

Distinguished Service Award—Begun in 1971, this award is intended for a member of Eta Kappa Nu "who has truly rendered outstanding service to the association on a continuing basis and for a relatively long period of time." The first award went to Alton B. Zerby, who was national treasurer, vice president, president, secretary, executive secretary, and editor of *The Bridge* for 24 years. Subsequent Distinguished Service members have been Roger I. Wilkinson, C. A. Faust, C. H. MacDonald, C. T. Koerner, Larry Dwon, Edwin B. Kurtz, Everett Lee, Leland A. Spangler, Paul K. Hudson, and William T. Burnett.

Eminent Member—This recognition may be offered "only to those individuals who, by their technical attainment and contributions to society, have shown themselves to be outstanding leaders in the field of electrical engineering and great benefactors of their fellowmen." Nominations may be made by college chapters, alumni chapters or any member of the National Executive Council or the National Board of Directors. The candidate must have the unanimous approval of the National Executive Council, the National Board of Directors, and at least three-fourths of the active chapters. The first three Eminent Members were Vannevar Bush, Royal W. Sorenson, and Vladimir K. Zworykin. Over the years Eminent Members have included a two-time winner of the Nobel Prize, industrialists, educators, inventors, and authors.

quarters and a number convened in the Bell Telephone Laboratories Building in Greenwich Village. Besides informal discussions about job openings, or the lack of them, the formal program was designed to distract or entertain. Papers were given on subjects as diverse as "The effect of music on human emotion" and "Say it with perfumes."

Once when one very serious member was preparing a slide presentation, another member inserted a slide of a pulchritudinous and quite unadorned female in the speaker's stack. No one present, Mr. Dwon said, ever forgot the look on the speaker's face when the errant photo flicked on. Sophomoric though it may be classified by some in retrospect, it was, after all, the staid 1930s, when even burlesque houses were illegal in New York.

Another "surprise" in this period was a little more controversial. Before his death, one highly respected chapter member, Vladimir Karapetoff, professor of electrical engineering at Cornell University, whose voice was well-known to all, taped a message to the group, admonishing them not to take themselves too seriously. He gave the tape to his wife, extracting the promise that she would give it to the chapter president to play at a meeting a year after his death. Mr. Dwon was president when this time came, and he carried out the former member's request. The group's reaction was decidedly mixed. Some felt their old friend's sense of humor had overextended itself, while others were happy to hear his voice and advice "from the hereafter."

Broad range of activities promoted

To function as more than just an honor society, Eta Kappa Nu members have served society as a whole, as well as the electrical engineering profession. Beginning with the college

chapters, members are encouraged to carry out a variety of productive activities, among them:

- To award prizes for freshmen and sophomores, based partly on scholarship and partly on achievements in activities and hobbies, since one association goal is to promote the values of being a well-rounded individual.
- To hold meetings with freshmen and sophomores in which scholarship and extracurricula activities are discussed.
- To stimulate members in public speaking and writing on topics that warrant investigation.
- To plan and conduct electrical shows, in cooperation with IEEE, that would be of interest to high-school students and the public.
- To plan and organize lecture series by outside speakers on timely and provocative topics for engineers.
- To broaden the subjects discussed at chapter meetings to include the biographies of men in politics, business, and economy, whose achievements will serve as useful models.
- To tutor students.
- To evaluate teachers, laboratories, and teaching methods to improve the educational system.
- To hold social meetings with faculty members to promote interaction and rapport.
- To appoint long-range steering committees to point up school needs and potential objectives.
- To instruct students in job-seeking procedures: the writing of resumes and letters, and the handling of oneself in interviews.

Guidance and recognition functions

The alumni chapters have a dual obligation: to help fellow members in their professional lives and to guide nearby col-

Ups and downs of *The Bridge*

Eta Kappa Nu's first publication was a four-page leaflet entitled *The Electrical Field* and issued in the spring of 1906. It was devoted almost entirely to employment. The leaflet was national in character, covering activities of both the Illinois and the Purdue Chapters, and it included a list of the graduates of each chapter for 1906.

In 1909 *The Electrical Field* became *The Bridge* and a semiannual publication. From 1910 to 1913, the publication was called *The Year Book* and was issued annually. Then, in 1913, it became *The Bridge* again, an annual publication with approximately 160 pages per issue.

By 1913, according to the minutes of the association's convention that year, the cost of publishing *The Bridge* had reached an unthinkable high of \$150. As a consequence, the price was raised to 50 cents a copy, and advertising was accepted. The page rate was \$10, but only to a select group: the Nungesser Carbon and Battery Works, McGraw Publishing Co., Westinghouse Electric Manufacturing Co., General Electric Co., Cutler-Hammer Manufacturing Co., National Lamp Works, and the Automatic Switch Co.

In 1919 *The Bridge* became a quarterly, averaging about 50 pages an issue, and by 1923 it was self-supporting. Beginning with the November 1923 issue, *The Bridge* appeared as a 9 x 12-inch standard engineering journal but without engineering articles. The aim was to carry human-interest material for the busy alumni. The approach was successful and pulled in readers from outside the association. One article in particular—a salary survey—was widely used by the U.S. Government and by professional engineering societies.

Leland A. Spangler, editor of *The Bridge* in 1931, recalled in 1975 some of the early days of the publication. "In 1928," he said, "Eta Kappa Nu hired a full-time secretary and editor for *The Bridge*, J. A. Umhoefer, at \$300 a month for a three-year period." Then the Depression hit. George H. Kelley, vice president of Eta Kappa Nu, got in touch with Mr. Spangler and asked if he would take over as secretary of the association and editor of *The Bridge*, which by then was a bimonthly, and split the reduced salary of \$200 with him.

"Since Westinghouse had instigated two or three 10-percent pay cuts, with Saturdays off plus two days a month off, I agreed," Mr. Spangler said years later.

By 1934, with business somewhat better, Mr. Spangler finished his three-year stint as editor, and Alton B. Zerby took over the post and held it for 23 years.

In 1963, Paul K. Hudson, associate professor of electrical engineering at the University of Illinois, Urbana, became editor and executive secretary and continues in those posts today.

lege chapters.

And the prizes that Eta Kappa Nu presents annually cut a wide swath in the field of electrical engineering. There is the Outstanding Chapter Award, the Outstanding Young Electrical Engineer Award, freshman and sophomore prizes, the Outstanding Electrical Engineering Senior Award, the Alton B. Zerby Award for one outstanding electrical engineering student in the U.S., the C. Holmes MacDonald Award for an outstanding young electrical engineering professor, the Distinguished Service Award for service to Eta Kappa Nu, and Eminent Memberships.

The association published two career guidance films, "Engineering: a challenge of the future" and "Engineering: a career for tomorrow," widely distributed to stimulate

The coat of arms



Upon the honor point of the shield is placed the caduceus, the wand of Mercury, Jupiter's messenger.

The mighty hand of Jupiter was selected as symbolic of the founding chapter, with a blade of lightning for each of the 10 founders.

A band of silver has been charged with three cubes of magnetite to represent three major requirements that the association looks for in members—"a life in which scholarship, character, and personality are jointly developed."

The shield is crested with a Wheatstone bridge and has the association's colors of scarlet and navy blue entwined beneath.

In using the Wheatstone bridge, an engineer can determine an unknown quantity when three other elements are known, the initiation ritual notes, adding: "The three qualities of which we are certain in you are scholarship, character, and personality. When these three are balanced, then the unknown—success—is determined."

high-school students' interest in an engineering career. Also, a 240-page history of the society is available from Prof. Paul K. Hudson at Eta Kappa Nu headquarters.

Eta Kappa Nu's initiation ritual stresses character development. Members must be willing to undertake hard work—even disagreeable work.

"Do not make the false assumption that the world owes you a living," the initiate is told. "On the contrary, by virtue of your superior talents and extensive training, you owe it to your fellowmen to aid and assist them whenever they need something that is within your power to give. Do not immediately complain about an uninteresting or routine job. Make the most of the materials you have at hand, and strive always to produce as creditable a product as is possible."

In addition the new member is admonished to be congenial, well-groomed, modest, dependable, tolerant of the ideas and practices of others, and unselfish.

While the world and the profession have undergone major societal changes and the pendulum has swung toward the liberal side in work and life-styles of today's engineer, some have observed that the Eta Kappa Nu's staunch support of the "old-fashioned values" like the work ethic, modesty and tolerance as virtues, and the concern for professional colleagues is an anachronism. Indeed, during the sixties, marked by strife and turmoil on the campuses, there was a noticeable diminution of interest in its activities on the part of both students and the younger members of the society. But that now is changing along with the social climate, and that may be the best indication that the association's founders forged an organization capable of withstanding the vicissitudes of time. ♦