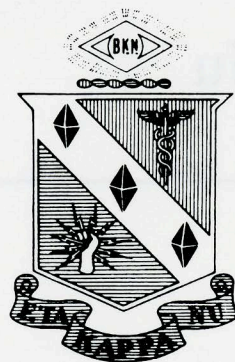


BRIDGE of Eta Kappa Nu



Dr. John S. Bay
Wins 1997
C. Holmes MacDonald
Outstanding Teacher
Award

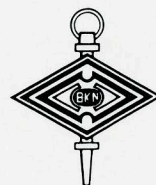


Editor and Business Manager
J. Robert Betten

November 1997
Vol 94 - No. 1

Contributing Editors

Robert F. Arehart
Tammi B. Robson
Larry Dwon



The BRIDGE is published by 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 Printing Company, 5th & Ferry Sts., Lafayette, Indiana. Second class postage paid at Lafayette, Indiana. Eta Kappa Nu Association, Subscription price: three years, \$15, Life Subscription, \$60.

Address editorial and subscription correspondence and changes of address to:

HKN BRIDGE, P.O. Box 2107
Rolla, MO 65402

Postmaster: Send address changes to: HKN Bridge, P.O. Box 2107, Rolla, MO 65402.

**INTERNATIONAL
EXECUTIVE COUNCIL**

President: John D. Wolf
Vice President: Richard J. Gowen
Executive Secretary: J. Robert Betten

**INTERNATIONAL
BOARD OF DIRECTORS**

Bruce DeMaeyer
Ronald Hoelzeman
James L. Melsa
Ronald A. Spanke

AWARD COMMITTEES

**OUTSTANDING EE STUDENT
AWARD COMMITTEE**
(Zerby-Koerner Award)

Chairman:
Mr. Marcus D. Dodson, P.E.
Consulting Engineer
9302 Grindlay Street
Cypress, CA 90630

**OUTSTANDING EE JUNIOR
AWARD COMMITTEE**
(Norman R. Carson Award)

Chairperson:
Ms. Laureen H. Parker
13030 Silver Creek Drive
Austin, TX 78727

**OUTSTANDING YOUNG EE
AWARD COMMITTEE**

Chairman:
Dr. Robert A. Bartolini
14 Darvel Drive, Route 4
Robinsville, NJ 08691

**OUTSTANDING TEACHING
AWARD COMMITTEE**
(C. Holmes MacDonald Award)

Chairman:
Mr. Robert F. Arehart
720 Emerson Street
Philadelphia, PA 19111

**OUTSTANDING CHAPTER
ACTIVITIES AWARD COMMITTEE**

Chairman:
Mr. Alan Lefkow
17 Jacobs Road
Thiells, NY 10984

**KARAPETOFF EMINENT
MEMBERS' AWARD COMMITTEE**

Chairman:
Mr. Donald Christiansen
434 West Main Street
Huntington, NY 11743

Contents

Announcements

3 Paul K. Hudson HKN
Development Fund: An-
nual Giving Campaign

4 Nominations invited: 1998
Vladimir Karapetoff Eminent
Members' Award.

Listings

5 Eminent Member Listing

Awards

14 1997 Eta Kappa Nu
C. Holmes MacDonald
Outstanding Teacher

New Chapter Installations

6 Kappa Mu Chapter:
Capitol College, Laurel, MD

9 Kappa Nu Chapter:
University of North
Florida.

General Interest

17 Historical HKN Bench-
marks, Part 5
by Larry Dwon

Become a Paul K. Hudson Fellow

Do it Today!

See Details on Page 3.

ALSO VIST HKN's WWW HOME PAGE

<http://www.umn.edu/~hknhdqrs>

PAUL K. HUDSON HKN DEVELOPMENT FUND ANNUAL CAMPAIGN

Paul K. Hudson
1916-1988



**Eta Kappa Nu Executive Secretary
and BRIDGE Editor,**
1958-1988

Established by the Board of Directors in April 1992, this important fund will honor the memory of Paul Hudson, a devoted servant of HKN and a man who truly exemplified the qualities that "balance the bridge."

The Hudson fund, managed by the HKN Board of Directors, will be used to support the general development of Eta Kappa Nu. For example, the fund will be used where necessary to help support HKN's national award programs; expansion, including the development of new college chapters and alumni chapters; and chapter visitations by current and past national officers and directors to assist with special occasions. All of these examples represent activities which Paul so heartily endorsed. Other developmental projects will be considered by the Board as funding grows and new objectives important to HKN become established.

As we honor Paul, we also honor donors to the fund by recognizing them as Paul K. Hudson Fellows. Five levels of giving are recognized, as in the form below. One-time donations at any level will be gratefully accepted. In addition, donors may now make pledges for annual donations. All donations will be counted cumulatively for the purpose of establishing the donor's current level of giving. Fellows at each level will be recognized annually by name in the BRIDGE.

Eta Kappa Nu thanks those who have already become Paul K. Hudson Fellows. We invite all members and friends of HKN to join the growing list of Fellows. And whether or not you are presently a Fellow, consider extending your support of the Hudson Fund on an annual basis. Simply fill out and return the form below. Thank you for your part in supporting and strengthening Eta Kappa Nu.

_____ I wish to become a Paul K. Hudson Fellow at the level of (check one)

_____ Distinguished Fellow (\$2000 and above)

_____ Century Fellow (\$1000 - \$1999)

_____ Sustaining Fellow (\$500 - \$999)

_____ Supporting Fellow (\$100 - \$499)

_____ Fellow (\$25 - \$99)

with the enclosed contribution of \$_____.

_____ I wish to pledge a total of \$_____ to the Hudson Fund, at \$_____ per year for _____ years, beginning _____.

NAME _____

ADDRESS _____

CITY, STATE, ZIP CODE _____

Return to: Eta Kappa Nu International Headquarters
Box HKN

University of Missouri-Rolla
Rolla, Missouri 65401

Nominations Invited for The Seventh Vladimir Karapetoff Eminent Members' Award



Dr. Vladimir Karapetoff

Nominations for the seventh Vladimir Karapetoff Eminent Members' Award are now being solicited. Nomination forms and guidelines may be obtained from Donald Christiansen, Eminent Member Committee Chairman, 434 West Main Street, Huntington, N.Y. 11743.

In 1991, the Eta Kappa Nu Board of Directors announced the establishment of an award in honor of Vladimir Karapetoff, an Eminent Member of HKN and Fellow of IEEE, who died in 1948. The first award was given on April 27, 1992.

The award, the Eta Kappa Nu Vladimir Karapetoff Eminent Members' Award, is made annually to an electrical engineering practitioner who has distinguished him/herself through an invention, a development, or a discovery in the field of electrotechnology. The fund to support the award was initiated through a bequest from Dr. Karapetoff's wife, R. M. Karapetoff Cobb, herself a distinguished chemical engineer.

A monetary honorarium is provided to the recipient (or shared by the recipients) of the award.

Factors that will be weighed by the jury will include the impact and scope of applicability of the invention, development, or discovery; its impact on the public welfare and standard of living and/or global stability; and the effective lifetime of its impact.

Dr. Karapetoff was born in St. Petersburg, Russia, January 8, 1876.

His father was an engineer and his mother a student at a military medical school.

Dr. Karapetoff emigrated to the United States in 1902, and became a naturalized citizen in 1909.

In 1904 he joined the engineering faculty of Cornell University as an assistant professor. In 1908 he was made a full professor and continued in that capacity until he retired from active teaching in 1939.

In an account of Dr. Karapetoff's career, his Cornell University colleagues R. F. Chamberlain, N. A. Hurwitz, and Everett M. Strong, recalled his continuing dedication to Eta Kappa Nu. During World War II he was commissioned a Lt. Commander in the U. S. Navy. But beginning in 1942, Kary, as he was known to his associates, began to lose his sight in both eyes, and despite temporary relief through operations, he ultimately lost his sight and schooled himself in Braille and "talking books."

Even after his blindness he seldom missed the annual Eta Kappa Nu Award dinner in New York City, and would address them in "refreshingly original and lucid expositions" of his technical interests. Fellow HKN members viewed these occasions as sort of a "national Kary reunion." His handicap notwithstanding, his cheerfulness, determination, and ingenuity prevailed.

His colleagues remembered him as an accomplished musician on piano, violincello, and double bass. He toured the country giving recitals

and lectures on Wagner, Liszt, and other major composers, and developed a five-string cello on which violin music could be played. He received an honorary Doctor of Music degree from New York College of Music.

Professor Simpson Linke, writing in the Winter 1984-85 *Engineering Cornell Quarterly*, cited the following excerpt from Karapetoff's *Electrical Laboratory Notes*, published in 1906, as reflective of the flavor of EE studies in that era:

In coming to the laboratory, bring with you a slide rule, an inch rule or tape, a speed counter, a screw driver and a pair of plyers [sic]. This will save you time and trouble of looking for them or borrowing them. Do not forget to have a pocket knife for skimming off wire; a bicycle wrench is also sometimes very handy to have.

Dr. Karapetoff was the author of several standard texts on electrical engineering that were widely used and revised through several editions, as well as other texts on electrical and magnetic currents, electrical testing, and engineering mathematics.

He was a member of AIEE, the Franklin Institute, the AAAS, the American Mathematical Society, the Mathematical Society of America, the American Physical Society, the U. S. Naval Institute, and the U. S. Naval Reserve Officers' Association.

Eminent Member Listing

EMINENT MEMBER	DATE INITIATED	TITLE AND AFFILIATION	THE BRIDGE		
			VOL.	NO.	PG.
V. BUSH	1-30-50	PRESIDENT, CARNEGIE INST. OF WASHINGTON	46	3	1
R. W. SORENSON	"	PROF. E.E., CALIFORNIA INST. OF TECHNOLOGY	"	"	"
V. K. ZWORYKIN	"	V. P. RCA LABORATORIES	"	"	"
F. E. TERMAN	1-22-51	DEAN, STANFORD UNIVERSITY	47	3	5
J. SLEPIAN	"	ASSOC. DIR. RES., W. E. CORP	"	"	"
K. B. MCEACHRON	"	MGR., GE CO. TRANSFORMER DIVISION	48	2	4
S. H. MORTENSON	"	CHIEF E.E., ALLIS CHALMERS MFG. CO.	"	"	5
W. H. TIMBIE	"	PROF. RETIRED; M.I.T.	"	2	5
L. DEFOREST	5-2-52	INVENTOR	48	3	1
E. C. MOLINA	1-19-53	BELL TELEPHONE LABORATORIES	49	2	9
H. PENDER	"	DEAN, MOORE SCHOOL U OF PENNSYLVANIA	"	"	10
C. A. POWEL	"	ASS'T. TO V.P.; WESTINGHOUSE ELECTRIC CORP.	"	"	12
P. SPORN	"	PRESIDENT, AMERICAN GAS & ELECTRIC COMPANY	"	"	13
W. R. G. BAKER	1-18-54	V.P. GENERAL ELECTRIC COMPANY			
M. J. KELLY	"	PRESIDENT, BELL TELEPHONE LABORATORIES			
R. RUDENBERG	"	PROFESSOR EMERITUS, HARVARD UNIVERSITY			
J. B. BLACK	4-20-54	PRESIDENT, PACIFIC GAS & ELECTRIC CO.	50	4	14
A. A. POTTER	10-16-54	DEAN EM., PURDUE UNIVERSITY	51	3	26
E. B. PAINE	"	PROF. EM., UNIVERSITY ILLINOIS	"	"	"
E. S. LEE	"	DIRECTOR ENGR'G.; G.E. CO.	"	"	"
E. F. W. ALEXANDERSON	1-31-55	RETIRED, GENERAL ELECTRIC CO.	51	3	14
A. N. GOLDSMITH	"	CONSULTANT	"	"	16
H. S. OSBORNE	"	BELL TELEPHONE LABORATORIES	"	"	18
H. A. WINNE	"	V.P. RETIRED GENERAL ELECTRIC CO.	"	"	20
J. B. WHITEHEAD	"	JOHNS HOPKINS UNIVERSITY	"	"	19
H. H. BEVERAGE	10-5-55	DIRECTOR RADIO RES., RCA LABORATORIES	52	1	19
L. N. MCCLELLAN	"	CHIEF ENGR., BUREAU OF RECLAMATION	"	"	19
W. D. COOLIDGE	1-30-56	ASS'T. DIR. RESEARCH LABS., G.E. CO.	52	3	12
H. NYQUIST	"	ASS'T. DIR. SYSTEMS, AT&T	"	"	14
L. N. BRILLOUIN	"	DIR. ELECTRONICS, IBM	"	"	12
J. H. DELLINGER	10-3-56	CH. RADIO TECHNICAL COMMISSION OF AERONAUTICS	53	2	14
W. B. KOUWENHOVEN	"	PROF. EM., JOHNS HOPKINS	"	"	15
D. A. QUARLES	10-14-58	U.S. DEPUTY SECRETARY OF DEFENSE	55	2	29
C. F. HOOD	10-30-58	PRESIDENT, UNITED STATES STEEL CORP.	"	"	33
P. L. ALGER	4-2-60	RETIRED, GENERAL ELECTRIC CO.	56	4	10
C. STARR	10-29-60	PRESIDENT, ATOMICS INTERNATIONAL	57	2	17
A. D. MOORE	9-10-61	PROFESSOR, UNIVERSITY OF MICHIGAN	58	2	18
J. L. BURNES	11-14-61	PRESIDENT, RCA	58	2	15
J. HILLIER	11-17-61	V.P. RCA LABORATORIES	58	1	23
C. F. WAGNER	11-20-61	CONSULTING ENGR. WESTINGHOUSE ELECT. CORP.	58	2	17
J. BARDEEN	3-29-62	PROFESSOR, UNIVERSITY OF ILLINOIS	58	4	10
L. V. BERKNER	"	PRESIDENT, GRADUATE RESEARCH CENTER, S.W., DALLAS	"	"	10
E. M. PURCELL	"	GERHARD GADE PROFESSOR, HARVARD UNIVERSITY	"	"	10
J. B. WIESNER	10-10-62	DIRECTOR RESEARCH LAB. FOR ELECTRONICS, M.I.T.	"	"	10
E. WEBER	11-5-62	PRESIDENT, POLYTECHNIC INSTITUTE OF BROOKLYN	59	2	17
G. S. BROWN	3-25-63	DEAN, M.I.T.	59	4	6
W. L. EVERITT	10-30-63	DEAN, UNIVERSITY OF ILLINOIS			
L. A. DUBRIDGE	8-25-64	PRESIDENT, CALIFORNIA INSTITUTE OF TECHNOLOGY	61	2	15
J. A. STRATTON	11-5-64	PRESIDENT, MASSACHUSETTS INSTITUTE OF TECHNOLOGY	"	"	21
D. G. FINK	11-4-65	GENERAL MGR., I.E.E.E.	62	3	14
S. RAMO	8-25-66	VICE CHAIRMAN OF BOARD, TRW INC.	63	2	8
W. E. KOCK	11-3-66	VICE PRESIDENT & CHIEF SCIENTIST, BENDER CORP.	63	3	7
G. H. BROWN	11-2-67	EXEC. V.P., RCA	64	3	8
W. H. PICKERING	8-22-68	DIRECTOR, JET PROPULSION LABORATORY	65	2	3
H. E. EDGERTON	11-7-68	PROF. EMER., M.I.T.	65	3	8
E. R. PIORE	11-6-69	V.P. & CH. SCIENTIST, IBM CORP.	66	3	8
P. E. HAGGERTY	8-20-69	CHAIRMAN OF BOARD, TEXAS INSTRUMENTS, INC.	67	1	6
W. CISLER	3-19-69	CHAIRMAN OF BOARD, THE DETROIT EDISON CO.	69	1	14
E. L. KANOUSE	8-17-70	CHIEF ENGINEER, L. A. DEPARTMENT OF WATER & RIVER	70	3	11
E. C. JORDAN	4-24-74	HEAD OF E.E. DEPT., UNIVERSITY OF ILLINOIS	71	2	5
E.T.B. GROSS	4-6-76	PHILIP SPORN PROFESSOR OF POWER ENGINEERING, RPI	72	1	12
EDWARD A ERDELYI	1978	PROFESSOR, E.E., UNIVERSITY OF COLORADO	76	2	15
LARRY DWON	1984	DIRECTOR, ENG'G. MANPOWER AMERICAN ELECTRIC POWER	81	3	19
HOWARD SHEPPARD	1984	VICE PRESIDENT, RUMSEY ELECTRIC CO.	81	3	19
S. REID WARREN	1984	VICE PRESIDENT FOR ENG'G. UNIVERSITY OF PENNSYLVANIA	81	3	19
DONALD CHRISTIANSEN	1985	EDITOR AND PUBLISHER, IEEE SPECTRUM	82	3	19
MARCUS DODSON	9-13-86	ENGINEER, LOS ANGELES WATER & POWER CO.	83	3	24
WILLIAM E. MURRAY	9-19-87	PRINCIPAL STAFF ENGR. DOUGLAS AIRCRAFT CO.	84	4	8
BERTHOLD SHEFFIELD	4-18-93	CONSULTANT, SENIOR ENGINEER, RETIRED, RCA	89	3	6
ROBERT W. LUCKY	4-18-93	VICE PRESIDENT, BELLCORE	89	4	5

Kappa Mu Chapter Installed

Capitol College - Laurel, Maryland

by

Robert F. Arehart

On May 2, 1997 a new Eta Kappa Nu chapter was installed at Capitol College, a private college, located in Laurel, Maryland, a suburb of Washington, DC. In this action, Eta Kappa Nu becomes the first engineering honor society to position a chapter at Capitol College, although a number of other honor societies have chapters located there.

The new HKN Chapter, Kappa Mu, was installed by Mr. Robert F. Arehart, a Past President of Eta Kappa Nu and a Past Member of the Eta Kappa Nu BOARD of Directors. Assistance with the new installation was provided by Dr. Robert Weiler, who is the Electrical Engineering Department Chair at Capitol College, and the person who guided the EE students in preparing their petition for this new HKN chapter, while serving as HKN Faculty Advisor pro-tempore.

Dr. Weiler, has graciously accepted the HKN student's invitation to become a charter member of the Kappa Mu Chapter, along with the new charter initiates, as is customary in Eta Kappa Nu. He will also continue as Faculty Advisor to the Kappa Mu Chapter.

The student-member-inductees are: Alvaro C. Bautista, Michael K. Breckon, Peter B. Carlson, Alan B. Clise, James M. Fazio, John V. Koch, Timothy P. Kramer, Todd B. McCluney, and Duke Swackhamer.

Capitol College's Electrical Engineering Department was opened in September 1989 through Dr. Weiler's efforts to provide students who were in the college's technology programs (but who felt they wanted more of a theoretical background) the opportunity to study engineering. The program applied for and received accreditation by the EAC/ABET effective 1995. Currently approximately 100 students are enrolled in the Major. This College, is a private coeducational college, providing practical educational experiences that enable graduates to advance, manage, and communicate changes in the information age.

Chartered in 1964, Capitol College offers degree programs in engineering, engineering technology, communications, and management. Career development is an

integral aspect of the College's mission, and graduates are in great demand by business and industry.

The College is accredited by the Commission of Higher Education of the Middle States Association of Colleges and Schools. The Bachelor of Science and Associate in Applied Science degree programs in computer engineering technology and electronics engineering technology and the Bachelor of Science degree program in telecommunications engineering technology are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET).

The Bachelor of Science in electrical engineering is accredited by the Engineering Accreditation Commission of the Accreditation Board of Engineering and Technology (EAC/ABET).

Capitol College's apartment-style residence facilities for men and women provide individual and double room accommodations. Students living in the residences have access to complete kitchen facilities in each apartment.

The student body is composed of 579 men and 90 women who come from sixteen states and twenty-one countries. The college offers a variety of extracurricular activities based on student participation and demand. Basketball and soccer are offered on an intercollegiate level, and basketball, bowling, football, soccer, and softball are offered on an intramural level. The Computer Club and the student branch of the Institute of Electrical and Electronics Engineers (IEEE) provide professional and social development for their members. The Student Government Association and student chapters of the Society of Women Engineers and the National Association of Black Engineers promote educational and social activities through sponsored trips, guest speakers, and social activities.

The Office of Student Development plans trips and activities throughout the year. Scholarship and academic achievement are recognized through Eta Kappa Nu, Alpha Chi, and Tau Alpha Pi national honor societies.

Location Capitol College is conveniently located in Laurel, Maryland, a suburban community near both

Washington, DC, and Baltimore, Maryland. Students have access to many educational, cultural, and social attractions, including Goddard Space Flight Center, the Library of Congress, Kennedy Center for the Performing Arts, Maryland Science Center, Harbor Place, and RFK Stadium, to name a few.

Majors and Degrees Capitol College awards a Bachelor of Science (B.S.) degree in electrical engineering and a Bachelor of Science (B.S.) and an Associate in Applied Science (A.A.S.) degree in computer engineering technology, electronics engineering technology, management of telecommunications systems, and telecommunications engineering technology. The College also offers a Bachelor of Science degree in management of information technology that allows students to study business with a special emphasis placed on computer skills and programming.

Academic Program At Capitol College, learning is centered both in and out of the classroom. Professors are available on a one-on-one basis outside of the classroom, and tutors and lab aides are available for additional assistance. The College's cooperative education program gives students the opportunity to obtain paid education work experience to supplement their academic program. In the engineering and technology curricula, students reinforce their classroom lectures with assigned laboratory projects.

Each department has its own sequence requirements for graduation. To earn a bachelor's degree, students must complete between 123 and 137 semester credit hours. To earn an associate degree, students must complete between 64 and 67 semester credit hours. In each degree program, students must complete a core of courses, including mathematics, sciences, humanities, and social sciences. The average course load is 15 credits per semester.

Advanced standing can be earned through Advanced Placement (AP) and College-Level Examination Program (CLEP) tests. Credits can also be earned through institutional validation examinations. Established to complement a student's academic program and to broaden his or her educational experience, the Cooperative Education Program arranges for paid work experience, prior to graduation, in jobs related to a student's major. Once hired, a student may work full- or part-time while enrolled at the College.

Academic Facilities Capitol College's modern high-tech campus occupies 52 acres, ringed with trees and occupying a gently sloping terrain. The sleek white forms of M/A-COM Hall, MCI Hall, and Telecommunications Hall are all connected by glass-enclosed pedes-

trian walkways. These buildings feature high ceilings, skylights, and exterior reflective glass walls. The 300-seat Avrum Gudelsky Auditorium allows the College to present a variety of lectures, seminars, student productions, and cultural and educational events.

The academic programs are supported by state-of-the-art electronics, technical communications, and telecommunications laboratories as well as by a fully equipped computer center. Under an open-laboratory policy, these facilities are available to students more than 64 hours per week. Students have access to a microcomputer lab containing IBM 486 PC/AT and Pentium computers, an HP 9000 with X-Windows, and IBM and Macintosh desktop publishing stations.

The John G. and Beverly A. Puente Library has reopened after a \$3-million renovation featuring a multimedia classroom with 15 interactive computer stations.

The Tutorial Resource Center contains computer-aided instruction packages that supplement in-class learning, with special emphases on Math and English skills and personal tutorials.

Financial Aid Capitol College maintains an extensive program of financial aid to assist students who need help in financing their education. Aid is available in the form of loans, grants, scholarships, and employment programs. Awards are based on financial need and/or academic ability. All students who wish to apply for aid must submit the Free Application for Federal Student Aid (FAFSA). Students are encouraged to contact the director of financial aid at the College for assistance and for information about institutional scholarships.

Faculty Teaching at Capitol College demands a focus on the student. The major concern is to challenge, yet give students every opportunity to succeed in their programs. Capitol College currently has 20 full-time and 32 part-time faculty members who have amassed extensive teaching credentials and industry experience. Full-time faculty members not only teach but also serve as academic advisers to assist students with planning their programs of study and achieving their academic goals.

Capitol College maintains a student-faculty ratio of 13:1. Individual attention and instruction are key parts of the academic program. Students are constantly encouraged to reach for their potential.

Student Government Student government plays an active and important role in the College. It is responsible for ensuring that an effective channel of communication remains open between students, faculty, and the administration. Representatives of the student body are elected annually. The Student Government Association contributes significantly to both academic and social activities.



Installation Officers: At Left, Mr. Robert Arehart, Past National HKN President; And At Right, Dr. Robert Weiler, Capitol College EE Department Chair, Guide Initiates Through HKN Ceremony



Kappa Mu's Chapter's Charter Member Initiates

Kappa Nu Chapter Installed

University Of North Florida

by Tammi B. Robson

Bridge Correspondent

The Kappa Nu Chapter of Eta Kappa Nu was installed at the University of North Florida on Saturday, May 17, 1997. The University is located in Jacksonville, Florida. The 1995-96 HKN National President, Mr. Michael Hajny, P.E., and President of Hajny Consultants, was the official installing deputy of the Association's 198th collegiate chapter. Mr. Hajny made the trip from South Carolina to Jacksonville, Florida for the purpose of installing the new Eta Kappa Nu Chapter and inducting the new HKN members.

The Kappa Nu Chapter was founded by a group of hard working and energetic EE students with the guidance of their Faculty Advisor, Dr. Clarence N. Obiozor. The fifteen (15) Charter members of the University's first EE honor society are listed below in alphabetical order:

Jeremy L. Branscome
Ursi Castro
Stephen B. Chisholm
George M. Cooper, III
Scott C. Drabek
Jonathan T. Fulford
John P. Haag
James F. Hutfles
Evans Allen Indalos
Charles M. Kessler
Clarence N. Obiozor
Fernando L. Pastrana
Tammi B. Robson
James R. Turner
Bradly A. Wallace

The Chapter's first slate of officers are listed here with their associated positions:

President:	James R. Turner
Vice President:	George M. Cooper, III
Recording Secretary:	Evans Allen Indalos
Corresponding Secretary:	Tammi B. Robson
Treasurer:	Charles M. Kessler
Bridge Correspondent:	Tammi B. Robson
Faculty Advisor:	Clarence N. Obiozor

The formal ceremony was held on a Saturday afternoon in the Electrical Engineering Building on the Jacksonville campus. Arrangements for the initiation and installation were made by the Chapter's group of officers and headed by Tammi Robson. The faculty sponsor of the Chapter is Dr. Clarence N. Obiozor, Ph. D., Associate Professor of Electrical Engineering at the University. Dr. Obiozor had the initiative to make the necessary contacts to have the Chapter installed at UNF.

Dr. William H. Caldwell, Head of the Department of Electrical Engineering, attended the induction ceremony. Attending and speaking at the ceremony was Dr. Charles Winton, Acting Dean at the University. Dr. Winton expressed his appreciation for the initiative taken by the students to form the chapter. He stated that a milestone had been laid now that the University has a chapter of HKN installed on the campus. The ceremonies were also attended by long time HKN member, Dr. Jay S. Huebner, Professor of Physics at the University.

After the ceremony, the initiates and the initiation team celebrated with a banquet hosted by Dr. Clarence and Mrs. May Obiozor at their home. The cuisine featured delicious Nigerian native entrees. The ceremony and banquet were thoroughly enjoyed by all attending.

The Electrical Engineering Department at the University of North Florida was founded in 1987 and received its ABET accreditation in 1995. Currently the Department has sixty-five (65) students enrolled in the program and growing each semester. The recently inducted fifteen (15) Eta Kappa Nu members make for 23% of the Electrical Engineering Department. This high percentage of honor students can be attributed to the many positive aspects of the University's EE program. The faculty's attention to the students as individuals, as well as organized student study groups contribute to the program's many attractive qualities. Most of the students are residents of the northeast Florida area and commute locally to the school. Many students not only are full time students but have full time jobs as well. These conditions provide for a refreshing wealth of

real world knowledge and experience to be introduced into each of the classes.

The University of North Florida itself was founded in 1972. The mission of the University to the northeast Florida community is to provide an intellectually stimulating and caring environment which:

- * Enables students to achieve their highest potential through learning that emphasizes liberal arts, professional and interdisciplinary education in the context of individual and societal responsibility;
- * Maximizes the personal and professional growth of teachers/scholars by supporting teaching, scholarship and creative endeavors that include the discovery, integration and application of knowledge;
- * Establishes significant partnerships with external communities by responding to the evolving challenges of an interconnected and more informed global society; and
- * Provides high quality support services that offer a campus environmental focused on the needs of the University's clients.

The practical engineering abilities of the University of North Florida's Electrical Engineering students were recently demonstrated at the Southeast Regional

Autonomous Robot Competition with a robot constructed by UNF's students. The team members were James Hutfles, Robert Kepler, and Scott Drabek. The robot won the IEEE southeast regional robot play-offs at the Virginia Polytechnic Institute in Blacksburg, Virginia. The student's robot competed head to head with robots from sixteen teams.

Other teams participating in the three day competition represented the institutions such as the University of Alabama-Birmingham (second place), Old Dominion University (third place), the University of Central Florida, the University of South Florida, the University of South Carolina, the University of Tennessee, the University of Kentucky, Auburn University, the University of Alabama-Huntsville, the University of Louisville, Southern Polytech, Mississippi State University and Clemson University.

Dr. Yacoub A. Alsaka, Associate Professor, Department of Electrical Engineering and Faculty Advisor to the UNF IEEE student branch proudly commented that the robot's success "is a tribute to the high quality education and excellent teaching offered at the University of North Florida."



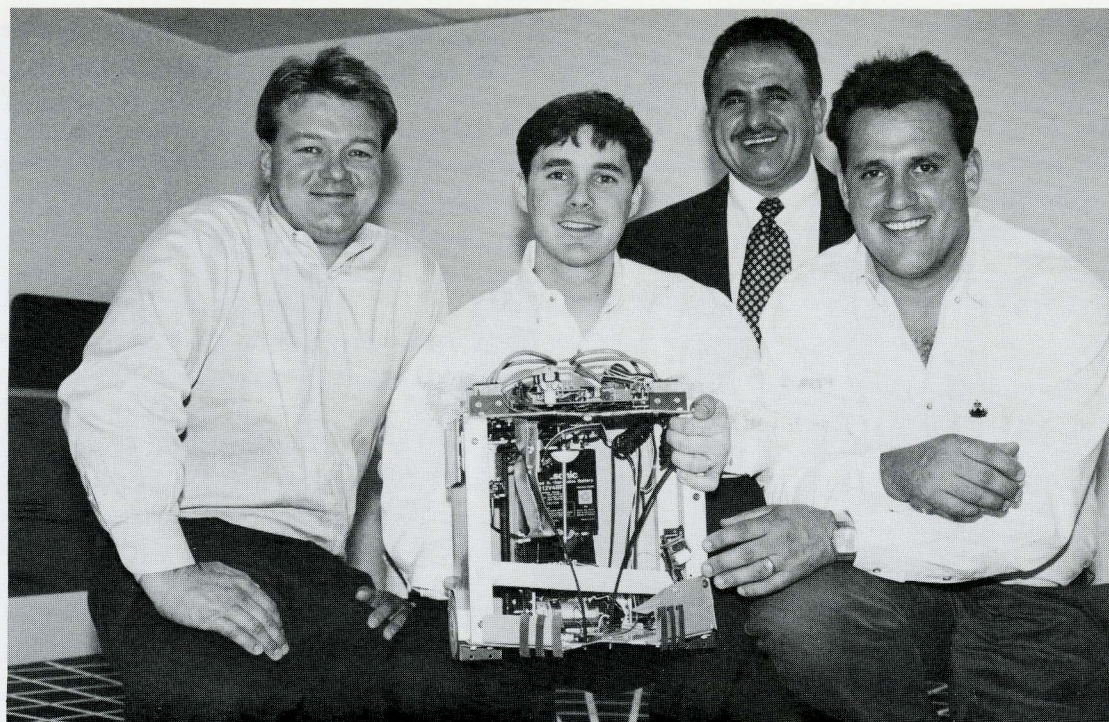
Left to right: Dr. Clarence N. Obiozor, Ph.D., Associate Professor of Electrical Engineering; Dr. Jay S. Huebner, Ph.D., Professor of Physics; Mr. Michael R. Hajny, 1995-96 President of Eta Kappa Nu Association; Ursi Castro, Eta Kappa Nu Member and Vice President IEEE; Fernando L. Pastrana, Eta Kappa Nu member; John P. Haag, Eta Kappa Nu member; Tammi B. Robson, Eta Kappa Nu Corresponding Secretary/Bridge Correspondent and SWE Vice-President; Scott C. Drabek, Eta Kappa Nu member and member of Robot Team; Evans Allen Indalos, Eta Kappa Nu Recording Secretary; IEEE President; Jeremy L. Branscome, Eta Kappa Nu member.



Left to Right: Stephen B. Chisholm, Eta Kappa Nu member; Jonathan T. Fulford, Eta Kappa Nu member and FES Vice-President; Dr. Clarence N. Obiozor, Ph.D., Associate Professor of Electrical Engineering; James R. Turner, Eta Kappa Nu President and IEEE Secretary; Charles M. Kessler, Eta Kappa Nu Treasurer.



Left to Right: Dr. William Caldwell, Head of the Department of Electrical Engineering; Mrs. Donna Huebner; Wife of Lynn Saiter; Wife of Dustin Mazacoli; Donna Salter and Don Salter, guests; John P. Haag, newly inducted Eta Kappa Nu Member, and guest Derick Mazadoli.



Left to Right: James Hutfles, robot team member, Robert Kepler, robot team member; Dr. Yacoub A. Alaska, Associate Professor, Department of Electrical Engineering, and Faculty Advisor to the UNF IEEE student branch; and Scott Drabek, robot team member.



UNF Students at the Southeast Robot Competition in Blacksburg, Virginia. Standing, Left to Right: George Cooper; David Fruehling, Alumni of UNF EE Department and employee and recruiter for Seagate; Dr. Yacoub A. Alaska, Associate Professor, Department of Electrical Engineering and Faculty Advisor to the UNF IEEE Student Branch; Mr. James Turner; Bianco Berry; Evans Indalos; Ursi Castro; and John Norris. In Front, Left to Right: Scott Drabek, robot team member; James Hutfles, robot team member; and Robert Kepler, robot team member.



Dr. John S. Bay **Wins 1997** **C. Holmes MacDonald** **Outstanding Teacher Award**

by Robert F. Arehart

Dr. Bay was nominated for this year's C. Holmes MacDonald Outstanding Teacher Award by Thomas B. Brooks, President of the Beta Lambda Chapter of Eta Kappa Nu at Virginia Tech University.

His comments and those of many other supporting students, faculty and administrators at Virginia Tech are summarized here: Dr. Bay has been an HKN Member since 1983, when he was initiated by Beta Lambda Chapter as an undergraduate student at Virginia Tech. He joined the faculty of the Bradley Department of Electrical Engineering in January of 1989 after receiving his M.S. and Ph.D. degrees in Electrical Engineering from The Ohio State University. Throughout his time at Virginia Tech, he has conducted world class research, advised numerous graduate students, developed the Department's robotics curriculum, and taught classes ranging from the sophomore level to the highest graduate level. There was overwhelming

agreement that Dr. Bay has earned the respect and admiration of many people at Virginia Tech.

Mr. Brooks requested comments from Dr. Bay's colleagues and from students who have known Dr. Bay. The engineering School Dean, Dean F. W. William Stephenson, provided a strong recommendation as did two of Dr. Bay's fellow faculty members from the Electrical Engineering Department. Recommendations from current and past students of Dr. Bay were also provided. Paul Johnson, an HKN Member and a graduate student working with Dr. Bay; Kimberly Evans, one of Dr. Bay's former graduate students who is now working in industry; and a group of students working on a project to which Dr. Bay is the Electrical Engineering Advisor, gave written testimonies. Members of Virginia Tech's Autonomous Vehicle Team, were also pleased to support Dr. Bay's nomination for the C. Holmes MacDonald Outstanding

Teacher Award. He has served as their Electrical Engineering Advisor since the team's inception (summer '95).

The team, composed of over 30 electrical, computer and mechanical engineering students, has been designing and building ground vehicles capable of autonomously navigating an obstacle course. With issues ranging from ultrasonic sensors and motor controllers to power systems and computer terminals, Dr. Bay's advice has been invaluable to our efforts. The project can be very time consuming, but he has always been there when needed to help the team members. Dr. Bay's involvement with the project is an example of his positive influence on not just electrical engineering students, but on all students he has had the opportunity to teach and advise. Dr. Bay is believed to be a most deserving nominee for HKN's teaching award.

Dr. Bay was said to be viewed by the team members not only as intelligent, but also as caring, honest, patient and dedicated to his profession. It was also obvious that Dr. Bay is held in high esteem by his peers as well as by his students. The nominating students could think of no professor who deserves the C. Holmes MacDonald Outstanding Teacher Award more than Dr. Bay, and they were pleased to have the opportunity to recommend him for it.

Dr. Bay was fairly new to the Virginia Tech Electrical Engineering faculty when he taught the undergraduate Controls course in 1989. No one knew what to expect from this new professor, but it did not take long for him to win the respect of his students. It was obvious that Dr. Bay put a lot of thought into his lectures. While Dr. Bay referenced the course textbook his lectures never relied solely upon

it. Dr. Bay frequently supplemented the course with his own notes, and developed many of his own homework problems. He worked hard at challenging his students and enlivening the course material; and as a result his students learned a great deal.

Professors like Dr. Bay, who are dedicated to balancing teaching and research responsibilities, should be commended. These are the teachers whose influence extends beyond the classroom for years to come. I know that the caliber of Dr. Bay's teaching was a strong factor in my decision several years later to choose Virginia Tech for graduate school.

At the graduate level, I found Dr. Bay's teaching to be as effective as ever. It was a testimony to his teaching skills that Dr. Bay's class in non-linear systems, material which many would find daunting, or at least dry, to this day remains my favorite EE course. Dr. Bay has a talent for communicating and making meaningful the abstract and complex.

While working on a Master's thesis, a student commented that he had the opportunity to get to know Dr. Bay very well. He remarked that as a teacher and as an advisor Dr. Bay's office was always open. Dr. Bay offered guidance and motivation frequently during the thesis project, always challenging the student to work harder and to have confidence in his own thinking. The student stated that Dr. Bay stands out as one of a handful of people whose mentorship contributed a great deal to the success which the student knows he will enjoy in his career. To be so certain that such success will be his, is a definite mark of the inspired confidence that Dr. Bay's teaching instills in his students.

Virginia Tech's Dean of Engineering, F. William Stephenson stated: "It is my distinct

pleasure to support the nomination of Dr. John S. Bay for the C. Holmes MacDonald Outstanding Teacher Award. I have known Dr. Bay since he first joined our faculty in 1989. For four years (1990-94) I served as Department Head of Electrical Engineering and in 1995, I had the privilege of presenting Dr. Bay's case to the University Promotion and Tenure Committee. Throughout these years, I have taken a close interest in his work and have been immensely impressed by his skill and dedication."

When Dr. Bay joined Virginia Tech, there was no robotics program in the EE Department. Since 1989, he has developed courses in laboratories in Robotics which have attracted strong interest from both undergraduates and graduate students.

Supported by the National Science Foundation, Dr. Bay and his undergraduate students built working models of his robots that are able to drive under a cardboard box, lift and move it. This achievement was widely reported in the popular press and marked the beginning of Dr. Bay's successful research career. Articles on his work appeared in Popular Mechanics, The Richmond Times-Dispatch, Graduating Engineer, and The Futurist. He also wrote a column for Financial Executive Magazine and was interviewed for the Voice of America radio show.

Dr. Bay has developed a highly successful undergraduate course, Principles of Robotics Systems, and has recently created an interdisciplinary course in Mechatronics which is team taught with two faculty from Mechanical Engineering. He is a gifted teacher whose course evaluations exceed 3.5 on a 4-point scale. However, it is his open door policy and obvious concern for the welfare of students that makes him stand out among his

peers. The corridor outside his office is frequently lined with students wishing to obtain his help and advice. To keep these students occupied while they wait, Dr. Bay distributes a variety of puzzles and artifacts such as a football, a stuffed armadillo, and a rubix cube!

Outside the classroom, Dr. Bay has been active in the advising of student projects. For example, he serves as the EE Faculty Advisor for the Autonomous Vehicle Design Team, a group of ME and EE students whose efforts won national honors in a recent contest. He has also advised students on an "army ant" robot project and serves as a high school mentor for prospective engineering students.

In addition to all these activities Dr. Bay is an active and successful teacher. He has been responsible for over \$700 K of external research, has set up robotics research, has advised 14 M.S. students to completion and currently advises two Ph.D. and four M.S. students, and has published extensively in the archival literature.

In summary, Dr. Bay is a true scholar. He is dedicated to his students -- a master teacher as well as an accomplished researcher."

The following highlights also pertain!

Achievements in Education

One of Dr. Bay's major achievements has been the creation of the Robotics Curriculum at Virginia Tech, including the development of two courses: EE 4704, Principles of Robotic Systems and EE/ME 4984 Mechatronics (co-developed with two Mechanical Engineering professors). In addition to his teaching, Dr. Bay has inspired students through research activity and by faculty advising of student projects. Two of these projects include the interdisciplinary Autonomous Vehicle Design Team and the Army-Ant

Robot Research Group. Both of these projects have inspired students to push themselves beyond the traditional classroom experience.

Service for the community

A perfect example of Dr. Bay's service to the community is his service as a mentor of high school students interested in studying engineering at the collegiate level. Virginia Tech holds open houses for high school students and Dr. Bay contributes to this effort by discussing the many aspects of electrical engineering with these high school students when they tour the facilities of the Bradley Department of Electrical Engineering.

For students already in college, Dr. Bay advises a freshman honors project every Spring semester. This provides Virginia Tech's top engineering freshmen the opportunity to advance their education at an early stage. These students are put on existing project teams, thus allowing them to gain experience from project advisors and upperclassmen.

Another example of Dr. Bay's service occurred in the Fall semester of 1996. Dr. Bay was one of two professors who gave up a faculty Christmas party in order to show his support for students by attending the HKN Induction Ceremony. This was very important because it showed the students that the faculty cares about HKN and the principals for which the organization stands.

Cultural Contributions

Dr. Bay's cultural contributions are evidenced through his writings in the "popular press." In these articles, Dr. Bay goes be-

yond the normal dry facts, commonplace to engineering, to bring the human element to the profession. This is exemplified in his article from the May/June issues of *Financial Executive*, "Getting The Bugs Worked Out," in which he compares developments in robotics with society's perception of automata. Dr. Bay discusses the anthropomorphic expectations placed on early robot designers by the general public and how these expectations were a tall order.

Dr. Bay also has a speech in which he compares swarms of small mobile robots to termite and army ant colonies. This speech has been extremely popular as he has been invited to present it to numerous groups over the last several years. Through this speech he helps to make engineering an interesting and inspiring profession.

Research Activities and Contributions to the Engineering Profession

Dr. Bay's most fundamental contribution to the profession is his influence on his students because today's engineering students are tomorrow's engineering professionals - in this fashion he is influencing the profession for years to come. In addition to his teaching and advising of students, Dr. Bay has contributed to the engineering profession by:

- 1) Conducting world-class research and publishing his research findings extensively in the technical literature.
- 2) Reviewing a textbook and twenty-two technical journals
- 3) Acting as proposal reviewer for the National Science Foundation
- 4) Chairing five conference sessions
- 5) Serving as associate technical editor for IEEE Control Systems Magazine

Historical HKN Benchmarks

Part 5: National Officers - 1935-1976 National Officers' Reports and Achievements

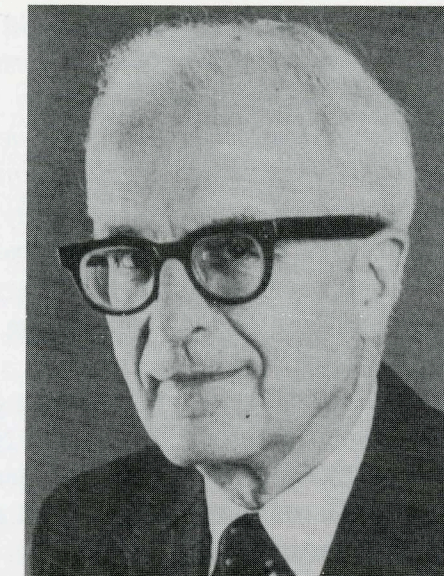
by Larry Dwon

This segment of an abbreviated history of Eta Kappa Nu continues sequentially that which was published in November issues of the Bridge in 1993, 1994, 1995 and 1996. The last previous segment included national officers' reports about activities during the period from 1904 through 1935. That period could be classified as one when national assembled conventions were used predominantly to discuss and vote on important HKN business, while that which follows covers the period when such business was carried out by so called mail conventions - correspondence with and votes by chapters by mail rather than by assembly. This change to mail conventions became necessary to improve the financial situation of HKN.

1935-1936 - C.A. Faust became president and served two consecutive terms. His first term report stated: "Installation of college chapters at Brooklyn Poly and Michigan Tech; and alumni chapters in Cleveland, Washington and Detroit. The individual Award was instituted. Increasing employment activities were reported...as were also the preparation of handbooks. These were the primary 1935-1936 activities."

1936-1937 - In his second term, all effort was directed towards implementing the plans developed by the previous administration. Faust then covered, in substantial detail, the following subjects which, he wrote, constituted a notable year:

- More strong chapters were installed including one at University of Michigan.
- The number of initiates and revenues increased.



- The HKN college chapters had a record year.
- Employment activity is now in a new phase.
- Recognition of OYEE completes for second year.
- The Bridge and directory were expanded.
- Life subscription plan gained in popularity.
- Ritual was made more impressive.

1937-1938 - President Morris Buck reported highlights of his term in office as follows:

- College chapters at Pittsburgh and Michigan Universities were established bringing the total to 28.
- Thirty three new nominations were received in the Outstanding Young Engineers Award with 27 hold over candidates on hand.
- The employment activity has shifted emphasis from obtaining jobs for unemployed members to bettering their positions.
- A booklet on HKN was finished.
- The constitution was revised and reprinted.
- A.B. Zerby visited all but two chapters.
- C.A. Faust and A.S. Dunstan visited the other two.
- The visitation plan was advantageous and workable. Members who watched both annual conventions and visitations think the later brought closer contacts between national officers and chapters than did the conventions.
- Besides, the visitation plan made possible a \$5.00 reduction in the initiation fee.
- The fiscal year was changed from December 1-November 30 to July 1-June 30.

1938-1939 - L.A. Spangler became president. An abstract from his report follows: "The total number of

college chapters increased to 30 by adding New York University and North Carolina State University; the individual award to young engineers increased chapter activities; a new handbook for college chapters; an employment conference for college chapters was sponsored by Chicago alumni chapter were other accomplishments of the year. He also reported about Honorary members, mail convention, a regional convention plan and constitutional revisions.

Table 1 shows some interesting statistics about the composition of the NEC and NAB. It is clearly noticeable that educator members on the NEC ranged from 0 to 66 percent and averaged 46 percent in the period 1933-1958.

Table 1
Eta Kappa Nu Association
National Executive Council and NAB
1933-1958

School year	President	V.P.	Ex.Sect.	Educators	Educ. -%	NAB
1933-34	Wilkinson	Best	Spangler	0	0	5
1934-35	Best	Faust	Zerby	0	0	5
1935-36	Faust	Buck	"	0	0	5
1936-37	"	"	"	0	0	5
1937-38	Buck	Spangler	"	0	0	5
1938-39	Spangler	Lewis	"	0	0	5
1939-40	Lewis	Burke	"	0	0	5
1940-41	Burke	Harrell	"	0	0	5
1941-42	"	"	"	0	0	5
1942-43	Harrell	Hoffman	"	1	33	5
1943-44	Hoffman	Kock	"	1	33	5
1944-45	Kock	Loynes	"	0	0	5
1945-46	Loynes	Fouse	"	0	0	5
1946-47	Fouse	Hibshman	"	1	33	5
1947-48	Hibshman	Williams	"	1	33	5
1948-49	Williams	Beach	"	1	33	5
1949-50	Beach	Sanford	"	1	33	5
1950-51	Sanford	Eshback	"	1	33	5
1951-52	Eshback	Kurtz	"	2	66	7
1952-53	Kurtz	Gross	"	2	66	7
1953-54	Gross	Hobson	"	1	33	7
1954-55	Hobson	Warren	"	1	33	7
1955-56	Warren	Ryder	"	2	66	7
1956-57	Ryder	Koerner	"	1	33	7
1957-58	Koerner	Dwon	"	0	0	7
Total				16	46	

1939-1940 - B.F. Lewis was president. He wrote that Eta Kappa Nu had done much to bring into fruition some dreams which the Founders had at the inception of the organization 35 years ago. He reviewed some of the achievements, giving credit to J.A. Umhoefer for conceiving a practical employment plan, an activity which received much wordage and not much implementation up to then.

He considered this to be the most outstanding work which Eta Kappa Nu had undertaken up to this time.

1940-1942 - F.X. Burke was another member elected to the presidency for two terms. To him belongs the distinction of having written a president's article in five of the nine issues during his term in office. An article at the beginning of his term in office, explained the proposed increase in the assessment for the Bridge and plans related to it.

A proposal to the 1940 mail convention reduced subscription rates, but increased the period for initiates to receive the Bridge to eight and nine years for senior and junior initiates, respectively. The benefits promised from these changes were the following:

- An improved Bridge.
- An alumni directory.
- Stimulation of alumni activities.
- Greater aid from alumni to college chapters.
- An expanded Bridge.
- Inauguration of a supplement communication medium - The Newsitron.
- Financial aid to college chapters.
- Search for a satisfactory modification of the visitation/mail convention plan.
- An Eta Kappa Nu Foundation. (endowment plan)

In one of Burke's Bridge articles he paid the following tribute: *"To the strong, farsighted band of loyal alumni in each city who were undaunted during the trying days of the thirties and kept on working and sacrificing for HKN, we owe more than most members realize. Born of those days are: the recognition Award to the most Outstanding Young Electrical Engineer; the Life Subscription Plan; The Chicago Regional Conference; the Outstanding Chapter Award and the Visitation Plan."*

1943-44 - The next President to report in the Bridge was C.B. Hoffman. His unique contribution, besides being a prolific writer of articles in the Bridge, was his effort to get students to write also. He offered a \$24 Award for the best student article published in the Bridge. His prime purpose was to get students to realize that HKN is their association

and that the Bridge is a medium through which they, as well as alumni, can and should express themselves and their interests.

The result of the first offer was gratifying, so he renewed it with the stipulation that the article was not to be on a technical EE subject. The second time produced a paper entitled, "A Study of the Coefficient Distribution of Lipstick." He did not make a third offer.

1947-1948 - N.S. Hibshman revived the practice, by some past presidents, to review the state of HKN. He wrote that the time was propitious for a critical examination of chapter policies. He stated, *"Initiations have been at a low point. Some chapters have been entirely dormant. On the other hand, the present pressure of college applications will inevitably mean a rise in scholastic standards and an increase in the competition for, and appreciation of, scholastic honors. Eta Kappa Nu should be ready."*

1949-1950 - Robin Beach wrote about the wealth of opportunities for self expression which are available to student members in HKN. Among them were the opportunities to expand their horizons into non-technical aspects of a professional person, including managerial talents.

Regarding the latter he wrote: "Effective chapter management: An HKN Challenge", the Bridge, September 1949. In his advice to students, the following appeared: "Characteristics of effective managerial talent encompasses many sterling qualities of which the salient ones are: a warm interest in the welfare of co-workers; justice, honesty, and loyalty toward all associates; a deep sense of responsibility to the job and to the advancement of fellow employees; an active and enthusiastic devotion in promoting the most effective execution of every phase of the work; the cultivation of a sense of humor to alleviate trying situations; an alertness toward expressing appreciation to co-workers for tasks well done; the delegation of responsibility among subalterns to develop their latent powers of leadership; and the employment of instructing, helping, guiding and encouraging fellow workers in the interests of living graciously and helpfully together in the common weal of daily endeavor."

He urged students to participate in extra-curricular activities to develop the foregoing qualities. He then listed 25 services that could be rendered by HKN chapters. He mentioned items of interest which he

found in reports from chapters. He made the following recommendations:

1. *Each retiring president should prepare an annual report of his term in office.*
2. *A teaching award should be established.*
3. *The president deserves some small recognition by HKN for the time, effort and personal sacrifice he gives voluntarily to the Association.*
4. *Outstanding alumni should be initiated into HKN chapters for their Alma Mater.*

Robin Beach ended his report with a request for feedback from his readers.

As a service to future HKN Historians, I especially recommend that all national presidents should prepare a final report about their term in office. Such reports become excellent sources of historical information of each administration period. Some of my better material came from volunteer officers who wanted future members to know how HKN has helped engineers and their related community. Perhaps those still living officers of HKN who did not write such reports would care to do so now to fill in any gaps in this historical review. They would be welcome.

1950-51 - Frank E. Sanford was one of few presidents who dug into past statistics about HKN and made some long range prognostications as well as some timely recommendations. He wrote three articles in 1950 and 1951 for the Bridge about this analyses. He wrote that more new members were inducted in the immediate four prior years than in the previous 20 years, and more new members were added in the last two years than there were total members at the time of the 25th anniversary (1929). His principal conclusion was, *"If we are to continue to increase our activities, we must increase our income above the rate that will follow with the probable long range rate of the membership"*. He also wrote the following which is in contrast with C.A. Faust's prior policy change: *"It has been Eta Kappa Nu policy to take the initiative of expansion. Correspondence from interested groups in colleges has led to the negotiations and petitions. A plan adopted last summer will further require petitions to be submitted by local EE honor societies which have been in operation for one or two years rather than by newly organized groups."* Consequently, a change must have occurred slowly and in an undetected way in the intervening years since Faust's administration.

Frank Sanford's conclusions were:

1. *"Eta Kappa Nu is now in a very healthy financial condition and probably can continue on the present operating basis, but activities or costs cannot be increased appreciably with the expected future income at the present rate."*
2. *A deficit is possible in some future years with present costs and expected income. The present reserve should cover such a period, even if it should be as severe as the depression of the thirties or the war years."*
3. *Any long range expansion or addition to present costs should be accompanied by a plan for payment or increased income."*
4. *Policy for the Bridge should be reviewed - for example, a change to quarterly publication should reduce the mechanical cost and still permit an expanded magazine."*
5. *A stronger drive should be made to broaden alumni interest in HKN affairs and the Bridge."*
6. *Some part of the reserve funds might be used for a revolving loan fund - invested in our student members rather than in stocks and bonds."*

A special mail convention was used to enlarge the NAB from five to seven members. Six members would be elected, three each year, but for two instead of one year terms. There would be three geographical regions to be determined by the NEC. The retiring president would serve one year on the NAB instead of two years.

Sanford made a strong appeal that elected members to NEC and NAB should be equally divided from faculty and industry. (see Table 1). He also favored mail instead of assembled conventions. He suggested that HKN should incorporate and that better use of Eta chapters should be made. There also was a need to clarify membership requirements at schools with five year programs.

1952-53 - E.B. Kurtz, the new president, wrote that activities of an honor society primarily revolved around the local chapter, and the summation of the activities of local chapters plus activities of alumni chapters constitutes the national Association. He then reviewed the growth of chapters and membership in HKN and compared to AIEE--The American Institute of Electrical Engineers.

1953-54 - Eric T.B. Gross was elected vice president and served with E.B. Kurtz. He then be-

came president with Jesse E. Hobson as vice president. There was no report from which to obtain the highlights of this team, but it appears that much planning of the 50th convention occupied this administration.

1954-55 - Jesse E. Hobson wrote that his term as president, *"was one of the most significant and eventful in the whole history of our Association. The Golden Anniversary was particularly important..."*

The business of the special 50th anniversary assembled convention went forward smoothly. The following subjects were discussed:

1. An increase in dues to finance an assembled convention at least every five years. NEC and NAB felt that dues should not be increased and that the national treasury should be able to underwrite the costs of future conventions.
2. A booklet, "The Golden years" commemorating HKN history was presented to the Association by J.E. Hobson and the Stanford Research Institute. Some information in Hobson's booklet is contained in Table 2 below.
3. A.B. Zerby received a volume of personal letters expressing gratitude for his many years of loyal service to HKN.
4. "Engineering--A Career for Tomorrow", a 25 minute movie was produced by the University of Illinois under HKN auspices. It was reviewed by the convention. Its purpose was to assist in engineering guidance activities at the pre-college level of education.

Other activities during the school year included:

- The questionnaire, "Employment Opportunities for Electrical Engineering Graduates" was sent to all undergraduate chapters. It was prepared by NEC as a pilot study.
- An essay contest was announced.
- The annual OYEE award dinner was held.
- A chapter was installed at Columbia University and Eta chapters were established at Alabama and Southern Methodist universities.

At the 50th anniversary convention, Jesse Hobson delivered an address, "Whither and Where", The Bridge, Winter, 1956.

Table 2
HKN Growth

Convention	25th (1929)	50th (1954)	comments
college chapters	22	56	plus 3 Eta
Alumni chapters	10	12	
Membership	4,000	23,051	
Initiates per year	250	2,310	1948-1949
"		975	1952-1953
"		1,039	1953-1954

This was a busy convention, including: E.S. Lee dedicated a relocated boulder/plaque commemorating the founding of Eta Kappa Nu, and many other festivities. A.B. Zerby was honored with an Album of testimonial letters and a certificate of Merit. Some Eminent members were elected. Business matters were taken care of as follows:

1. Permission to allow NEC to shorten the term of a new Executive Secretary or one near retirement or past normal retirement age of 65, from three years to any shorter period.
2. Authorization to split the Executive Secretary and the Bridge Editor into two separate positions.
3. A \$150 per month pension for A.B. Zerby was proposed upon retirement.

Subsequent to the convention, five of seven NAB members requested that the ratification ballot for the foregoing proposals should be withheld until after the NEC-NAB meeting on January 30, 1955. The general concern was that the proposed amendments were drawn in haste, were ambiguous in their entirety, and at that meeting they would be clarified. However, a statute to provide the retirement pension was passed. This subject was discussed actively and at length by many alumni members in the weeks following the convention. I participated in discussions within the New York Alumni Advisory Council and chapter. The environment was very serious and concerned.

The New York Advisory Council was comprised of 30 past national officers in residence within the New York area, and all past presidents and present officers of the New York alumni chapter. These members opposed the first two changes and were in agreement with the third. Their reasons were the following:

- An open ended term of office (up to three years) would not be an attraction to a new man, and

was an unfair threat to the security of a faithful employee such as A.B. Zerby.

- A split of these jobs, which have been integrated for so long, would create serious problems of coordination as later proven (1957) when J.J. Raffone was hired as Bridge editor before P.K. Hudson became Executive Secretary.
- The proposal to have a part-time Executive Secretary was tried for a period of a few years in the early thirties and discarded as being unsatisfactory.

Discussions were extended to alumni chapters in Philadelphia, Los Angeles and San Francisco. It was determined that those chapters would vote "No" on the first two proposals and "Yes" on the third. Then the New York alumni chapter and Council prepared an informative document and a letter describing its views and voting intentions. It was intended for distribution to all college and alumni chapters, but it was not sent because of a turn of events at the NEC-NAB meeting precluded its need. This illustrates how a concerned group of alumni members who were ready to prevent possible harmful acts at an assembled convention. Similarly a concerned NAB helped also.

1955-1956 - S.R. Warren, Jr. was the next President of HKN. He stated at the outset that progress in a dynamic organization, such as Eta Kappa Nu, is a continuous process. The year began auspiciously. The first Eta Kappa Nu survey of electrical engineering graduates culminated in a report which influenced opinions in the engineering profession. Dr. J.E. Hobson and associates at Stanford Research Institute carried out the planning, implementation and analysis of the survey. SRI generously contributed most of the funds. This year, another survey, on a broader base, was instituted with AIEE and IRE cooperation. The following other events were reported by Reid Warren:

- Chapters at Texas A&M College and Texas Technological College were installed as well as Eta chapters at Virginia, Maryland Denver. The chapter total now was 59, of which 8 were Eta chapters. Members now numbered over 20,000.
- Eminent members were inducted.
- OYEE Awards were continued.
- Alumni chapters' activities flourished.

Remaining problems included a reorganization of the HKN structure. Some changes in the Constitution and statutes were needed. The Bridge and executive secretary position needed attention. A new executive secretary would be needed upon A.B. Zerby's retirement. Some advocates also wanted to enlarge the OYEE Award dinner to an event that would attract 500-1,000 individuals. Many volunteers who worked closely on this activity for many years were not of the same opinion. The event had been successful and the expense of it had been kept reasonable. I was one, along with Roger Wilkinson, who were among the dissenting group.

It became my responsibility to find a replacement for A.B. Zerby--a formidable task; but a great honor. I interviewed several candidates who expressed an interest in the position, Paul K. Hudson appeared to me to be the most likely to perform the job as seriously and who appeared to have the capabilities that closely resembled those of A.B. Zerby. I had the guidance of HKN stalwarts who were on the New York Advisory Council and who were politically astute regarding Eta Kappa Nu affairs at the top of the pyramid. They agreed with my choice before it was made known to NEC. Later it will be observed that I also had the honor and responsibility to find a replacement for P.K. Hudson when he became ill and chose to retire.

Administrations, prior to the one in which I was vice president, then president, contracted the job of Bridge editor to J.J. Raffone independent of my search for the executive secretary. This caused administration difficulties which were mentioned previously and which will be covered additionally later in this article. Nevertheless, Eta Kappa Nu has survived a variety of trials and tribulations, basically because of the honorable members it has fortunately initiated who volunteer their services.

1957-1958 - Carl T. Koerner reported about his term of office in an article titled "Eta Kappa Nu- A New View", Bridge, Winter, 1957. He included HKN growth, A.B. Zerby's request for retirement and the hiring of J.J. Raffone as editor of the Bridge. He mentioned some headquarters changes and that a five year convention plan had been ap-

proved. Some constitution and statutes were revised.

In another article, "Today's World and Tomorrow's Challenge to Eta Kappa Nu", Bridge, Spring, 1958. Carl reviewed the growth of Eta Kappa Nu and gave his opinion that by 1975 there would be 55,000 members and 110 chapters.

1958-1959 - This was my term in office as President. "Eta Kappa Nu in Transition", the Bridge, Fall, 1958, includes my article which describes a uniquely hectic period in our associations history. Some highlights of this transition period are the following:

1. Eta Kappa Nu began to operate with an expanded Board of Directors--NAB was discontinued. Between 1951 and 1958, the NEC constituted the Board.
2. A new Bridge editor was working on a contractual basis. He set a goal of a 20,000 member circulation of "electrical engineering opinion leaders". This was Raffone's statement.
3. Professor P.K. Hudson became the new Executive Secretary and A.B. Zerby remained employed as a consultant.
4. The new Executive Secretary was located in Urbana, Illinois; HKN headquarters remained for a time in Dillsburg, Pennsylvania; and the Bridge editor was in New York. Thus the administrative relationships among the respective responsible entities became very difficult, for a variety of reasons.
5. All formerly mentioned national activities were continued and, in addition, a Distinguished Lecture series was initiated in connection with the IRE Convention.

Complicated people relationships arose which called for drastic measures to resolve them. My report as president was published in the Bridge, Fall, 1959. Subjects concerned in that report included:

- New Constitution implemented.
- New Secretary passed a critical year with flying colors.
- Headquarters office moved o Urbana, Illinois.
- Bridge publication changed.
- HKN Recognition award was continued.
- Distinguished Lecture.
- Eminent Member inductions.
- Special Assembled Convention.

- Letter of encouragement to Faculty Advisors.
- Public Relations.
- Analysis of Cash and Investment Portfolio.
- Analysis of Income and Expenses.
- Handbook for national officers prepared.
- A.B. Zerby: a devoted servant honored.

This was an unusual year in which to be president but we avoided a near disaster. In retrospect, my final report included the following statement: *"Nothing of consequence could have been accomplished were it not for the excellent teamwork that existed, among my associates, Jack Tarboux and Paul Hudson. I only wish that Jack were here (he died of a heart attack) so that I could thank him and tell him how much his advice meant to me when we faced several personnel problems that needed depth in human understanding..."*

1959-1961 - Albrecht Naeter became president for two terms. Holmes MacDonald who became vice president when Tarboux died could not accept the presidency after my term expired.

Al Naeter's report included the following:

- *"I placed major emphasis on helping Eta Kappa Nu attain a sounder financial footing. Our Association can now face the future with greater confidence financially; and is ready, I believe, to expand its activities."*
- *"According to a budgeting analysis made by past president Larry Dwon for a period of twelve years immediately preceding my first year's term in the presidency, total income exceeded expenses in the last seven years of the twelve year interval. In the latter part of this interval there were certain non-repetitive expenses incidental to getting ready for and moving the headquarters from Dillsburg to Urbana that helped put operations into the red."*
- *"During my first year in office it was quite clear to NEC and directors that changes would have to be made to make sure that expenses would be reduced. Our Executive Secretary accomplished a lot by changing some office procedures, without reducing services. The official audit for the year shows income exceeded expenses by \$9,518.54--20% of the income was saved."*

At this time there were 37,000 members, 82 active chapters and 7 alumni chapters which were known to be active.

Al Naeter also reported the following which indicated a change from past experience: *"In recent years*

there has been a growing feeling particularly among the active chapters, that the visitations (personal) were not serving a useful purpose. The chapters are being asked to express reactions to having assembled conventions at three year intervals and visitations only upon requests from chapters or when NEC or directors deem it desirable at certain chapters."

An Ad Hoc committee in cooperation with IRE consisting of John Tucker, John Craig, John Lyon, chairman, was formed to explore the subject. John Tucker suggested a special ritual for Eminent member inductions. He implemented his suggestions masterfully. He served HKN in many other ways.

As a final comment Al Naeter wrote: *"This was a difficult year in seeking advertisements in the Bridge"*.

This was the last report available to me by presidents of HKN. The reader will find further historical information in the Bridges published since 1961. No other reports by presidents of HKN were available to extract official historical information.

However the following table from the 1976 history provides some interesting information.

Table 3
Eta Kappa Nu Association
NEC and NAB Members
1958-1976

School year	NEC Pres.	NEC V.P.	Executive Secretary	Educators number	Educators percent	NAB number	BOD number
1958-1959	Dwon	Tarboux	Hudson	2	66	0	7
1959-1960	Naeter	Craig	"	2	66	0	9
1961-1962	Craig	Lyon	"	2	66	0	9
1962-1963	Lyon	Lagerstrom	"	3	100	0	9
1963-1964	Lagerstrom	Koopman	"	3	100	0	9
1964-1965	Koopman	Sheppard	"	2	66	0	9
1965-1966	Sheppard	Hyde	"	1	33	0	9
1966-1967	Hyde	Smith	"	2	66	0	9
1967-1968	Smith	Farley	"	2	66	0	9
1968-1969	Farley	Hancock	"	2	66	0	9
1969-1970	Hancock	Gabrielle	"	2	66	0	9
1970-1971	Gabrielle	Cherry	"	2	66	0	9
1971-1972	Cherry	Weimer	"	3	100	0	9
1972-1973	Weimer	Murray	"	2	66	0	9
1973-1974	Murray	Klos	"	2	66	0	9
1974-1975	Klos	Butler	"	3	100	0	9
1975-1976	Butler	Eyman	"	3	100	0	9
Total				40	74		

The final article in this series will deal with major HKN activities which have made the Association vibrant and prestigious in the eyes of electrical engineering educators, students, as well as, practicing engineers in industry and agencies of the government.

(ISSN 0006 9809)
SECD 06 4700

Second-Class Postage
Paid at Lafayette, Indiana
and at Additional Offices

A Life Subscription to the BRIDGE is
available at a modest cost of \$60. Send a
check with name and address to:

HKN BRIDGE
P.O. Box 2107
Rolla, MO 65402

MOVING?

Please Send Your New Address To:

ALSO INCLUDE YOUR OLD ADDRESS
OR SEND THE MAILING LABEL FROM
THIS ISSUE OF BRIDGE MAGAZINE

HKN BRIDGE
P.O. Box 2107
Rolla, MO 65402