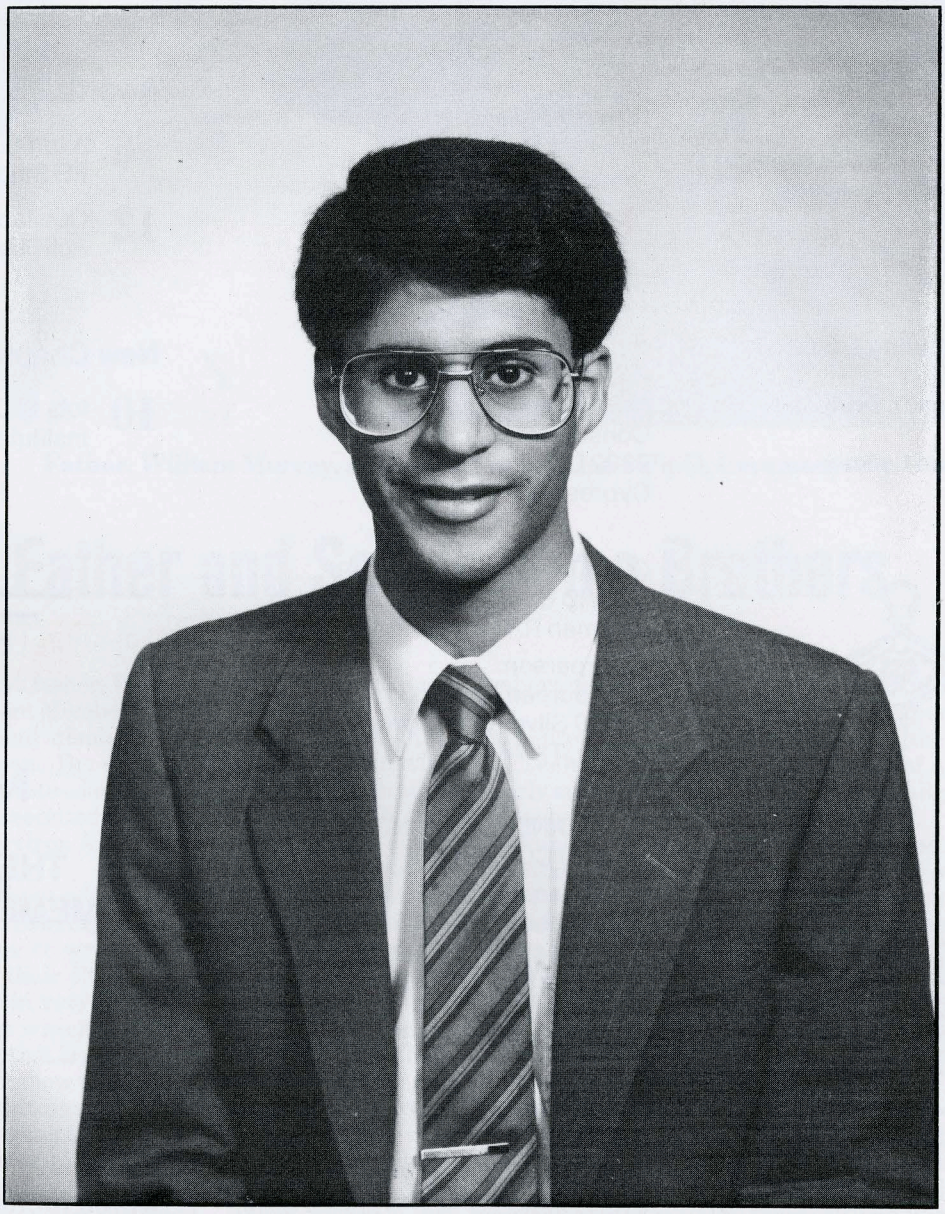
BRIDGE of Eta Kappa Nu



Ashok Kumar
1990 Winner, Alton B. Zerby
Outstanding EE Student Award

Feature Articles:
Father and Son Become Brothers
Purdue's Winning Outstanding Chapter Activities Report

Volume 87 No. 1 **November 1990**

Editor and Business Manager
J. Robert Betten

November 1990
Vol. 87—No. 1

Contributing Editors

Marcus D. Dodson

Alan Lefkow

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 Printing Company, 5th & Ferry Sts., Lafayette, Indiana. Second class postage paid at Lafayette, Indiana. Eta Kappa Nu Association, Subscription price: three years, $9, Life Subscription, $36.

Address editorial and subscription correspondence and changes of address to:

HKN BRIDGE, P.O. Box 2107
Rolla, MO 65401

Postmaster: Send address changes to: HKN Bridge, P.O. Box 2107, Rolla, MO 65401.

Contents

Feature Articles

3 Father and Son Become Brothers

Awards

6 Alton B. Zerby, Outstanding EE Student Award

12 Outstanding Chapter Activities Award

New Chapters

10 Iota Pi Chapter, California Institute of Technology

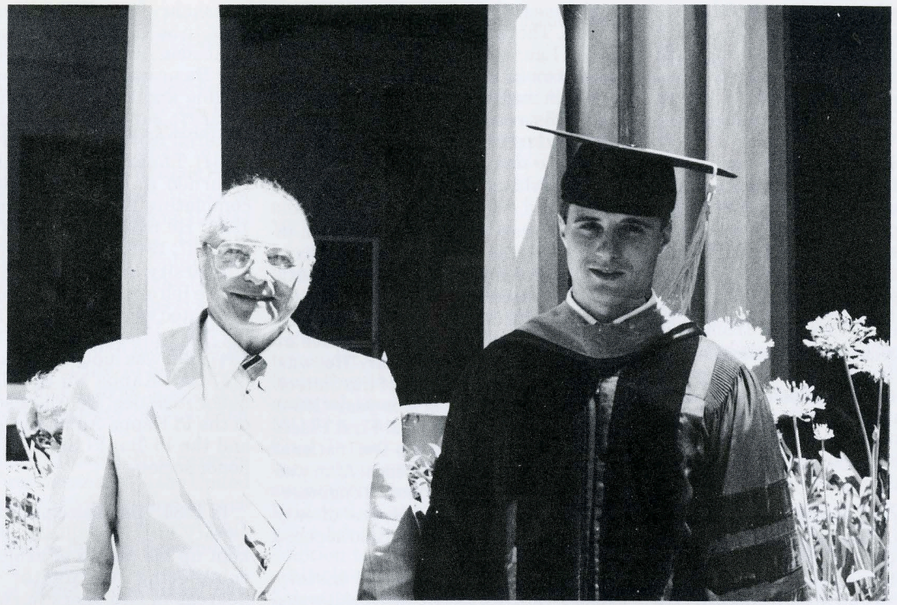
NOTICE

THE NEW HKN MEMBERSHIP FEE

IS

$23

which includes a 2 year initial subscription to BRIDGE as determined in the 1989-90 HKN Mail Convention.



Father, William Murray, and son, Alan, at Alan's Ph.D. Ceremony.

Father and Son Become Brothers

This is a story about a father, William E. (Bill) Murray, Eminent Member of Eta Kappa Nu since 1987 and member since April, 1947; and a son, Dr. Alan G. Murray, initiated as a professional member in July, 1989, but associated with Eta Kappa Nu since his birth on August 29, 1962.

In writing a story about a father and a son, now brothers in Eta Kappa Nu, it is, of course, tempting to write about their similarities and their differences. Of course, they lived in very different times and conditions which affected their experiences; but that is part of this story. Perhaps this will show that opportunities are often what one makes of obstacles, and achievements are what one constructs from these opportunities. To this extent, times and places become less important than how one responds to them.

The father, Bill Murray, entered the University of California at Berkeley (UC-B) in August of 1941 and experienced the shock of the Pearl Harbor attack on a sunny Sunday morning, December 7, 1941, while preparing for his first college final examination. The computer was yet to be a future achievement, the transistor was a laboratory curiosity, and the slide rule reigned supreme as the most important engineering instrument.

The son, Alan Murray, entered the California Institute of Technology (Caltech) as an honored early admission student, with advanced second-year placement in both physics and mathematics, and was already rather competent in the use of computers. He had already discovered and rigorously proven 89 original formulas related to difference equations and numerical analysis. Many of these he had used in rather unique and creative solutions to problems in mathematical competitions. He had already received many honors and awards in local, state and national competitions in mathematics and science. Among these awards were: Winner of the Westinghouse Science Talent Search in 1980, for which he went to Washington, D.C., for interviews with scientists, politicians and other industry leaders about his project, which was on display in the Great Hall of Science of the National Science Foundation. He was later to receive a three-year NSF Fellowship for his doctoral program at Stanford University. He also won the local and regional science project competitions and the Sweepstakes Prize; then he went to the International Science and Engineering Fair in Minneapolis-St. Paul, Minnesota. There he won Army and Navy Citations, the 3rd place Mathematics Association of America prize and the 4th place overall prize (math and computers).

On Honors Night as a Senior at Foothill High School in May, 1980, Alan received 17 major awards for his achievements in local, state, and national science and mathematics competitions and examinations, in academic competitions, and in language (German). He also received a four-year major scholarship from the McDonnell Douglas Corporation.

The father graduated in 1941 as Valedictorian of his high school and was an all-semester Life Member of the California Scholastic Federation, Editor of the 1941 Yearbook, and Winner of the Helms Olympic Foundation Gold Medal as Sports Editor of the Year. The son graduated from high school in 1980 with honors as an all-semester "100-percenter" and Life Member of the California Scholastic Federation.

The father achieved the Star Scout rank in the Boy Scouts of America; but the son achieved the Eagle Scout rank at age 14 and the Order of the Arrow, while achieving many other recognitions.

Alan played four instruments (saxophone, piano, clarinet and flute) with considerable skill, and he arranged 28 pieces of music for a special high school fund raiser musical program. He played the saxophone for several years with the Santa Ana Winds, an award-winning youth marching and concert band, which toured California in competition and went on Canadian and European tours. He also played the saxophone four years in his high school concert and stage bands.

Bill also had a four-year musical experience as the First Solo Trumpet in his high school band and orchestra, and he was Solo Trumpet in a youth concert and marching band which toured California in competitions. He then spent 2½ years as First Trumpet in the University of California-Berkeley marching and concert bands.

Alan had a broad experience in sports and athletics. He played four years in the Junior All-America Football program on a team which twice won the Orange County League Championship. He played three years in the Little League Baseball program on a team which won the League championshp one year. He played two years in the American Youth Soccer Organization (AYSO) on a team which won the League title, and he wrestled for two years with the Tustin Patriots. In high school, he lettered six times in cross-country running, wrestling, and track and field competitions; he swam the mile in competition, and he competed in many road races from 2 miles up to a 26-mile marathon.

In college athletics, Alan was Caltech's first-place male diver for intercollegiate swimming and diving competitions. He also competed in college wrestling and water polo, and he ran two KELROF 24-hour endurance relay competitions.

Bill's competitive athletic experience was limited to receiving letters in high school team tennis. The United States Army preempted any later athletic experience with its own form of physical training, including a program with the 82nd Airborne Division in 1950-51.

In Caltech, Alan took a double major, Physics and Applied Mathematics, and he graduated "With Honors" in both majors, taking up to ten courses per term to complete all the requirements. Alan was the second student in Caltech's 90-year history to win *all* the prizes and awards available to a mathematics student. He won two Morgan Ward prizes, in his sophomore and junior years, for his independent research achievements, and he won an Eric Temple Bell Prize for outstanding original research by an upper-division student. The late Dr. Richard Feynman, a Nobel Laureate in Physics, was Alan's instructor in a graduate course. Dr. Feynman suggested that Alan should revise his research term paper and submit it for the Bell Prize competition, due to the unusual creative content of his research and discoveries.

Alan placed highest from Caltech in his senior year in the annual William Lowell Putnam Mathematics Competition, a national collegiate examination for original solutions to complex problems. He also had achieved second place at Caltech in his junior year. He was selected to be the Captain of the Caltech Putnam Team in his senior year (1984) and the team won National First Place. Alan was listed in the "Top Ten" national listing for his individual score. Alan was inducted into the Tau Beta Pi engineering honor society in 1984, one of only three Caltech Physics majors so honored that year.

The differences in world history caused very different university-age experiences for Bill Murray in the period from 1941 to 1946. While he was a freshman at the University of California at Berkeley, at 18 years of age and soon after World War II began, he enlisted in the U.S. Army Signal Corps Reserve and was called to active duty at the age of 19 years. After earning promotions in the noncommissioned ranks, he was accepted for the Officer Candidate School at Fort Monmouth, New Jersey. He was commissioned as a Second Lieutenant in the U.S. Army Signal Corps in July, 1944, at the age of 20 years. He was trained in field radio and large fixed station radio systems at Press Wireless, Inc., in Hicksville, Long Island, New York. While there, he met his bride-to-be, Jeannie Morris in Flushing, New York. While yet 20 years of age, he was assigned to duty at Cairo, Egypt, then assigned to be the Commander of a field unit of the Signal Corps Plant Engineering Agency. His unit installed air-base communications, telephone systems, ground power systems, radio ranges, aids to navigation and Lorenz instrument landing systems (ILS) at Habbaniya Air Base, Iraq, about fifty miles from Baghdad.

When he was 21 years of age in 1945, Bill was promoted to Battalion Engineering Officer and he was assigned to develop air-base communications and air traffic control systems in nine countries; from Turkey to the Anglo-Egyptian Sudan and from Karachi, India, to Algiers in Algeria. In December, 1945, after VJ Day had ended World War II, Bill accepted a release from active duty at HQ-Persian Gulf Command in Khorramshahr, Iran. He was employed by TWA to be the Chief of Communications at Abadan Air Base, Iran, until Dharran Air Base was constructed in Saudi Arabia and could handle two-engine aircraft carrying servicemen and material from the China-Burma-India (CBI) Theatre of Operations. Bill returned to the United States upon completing this assignment in April, 1946. He married Jeannie Morris on April 27, 1946, and they travelled to the University of California at Berkeley where Bill completed his senior year and graduated with a BS degree in Engineering (EE Option) in June, 1947. In April, 1947, Bill was inducted as a member of both Eta Kappa Nu and Tau Beta Pi honor societies. He was also a member of the Pi Kappa Alpha social fraternity and the Pi Tau Pi Sigma Signal Corps honor society.

In 1984, Alan selected Stanford University for his graduate program. He kept up his record of achievement by completing two Master of Science degrees in two years in two separate fields and in two different academic colleges, in 1986. He earned an MS degree in Statistics from the College of Humanities and Sciences and an MS in Operations Research from the College of Engineering. He was awarded a full National Science Foundation Fellowship for his doctoral program and he received the Doctor of Philosophy degree in Operations Research from Stanford University in June, 1989. His thesis, "Complexity of Acceleration-Constrained Motion Planning" was said to significantly advance the theory of robotics. Concurrently, he passed eight of the eleven sections of the examination for "Associate of the Society of Actuaries", given by the National Society of Actuaries in San Francisco, California.

Alan worked in custom semiconductor electronics design analysis at Silicon Systems, Inc. during all four summers while he was at Caltech and during two subsequent summers while he was at Stanford University. He developed his electronics knowledge and experience at Caltech and at Silicon Systems, Inc., where he developed computer algorithms for automated design of custom integrated circuits. During his final three years at Stanford University, Alan was employed during the summers and holidays by the Center for Communications Research, a Division of the Institute for Defense Analyses at Princeton, New Jersey. After receiving his PhD degree, Alan accepted an appointment to the Research Staff, where he is now employed in highly classified scientific research. He has also written and published an unclassified technical paper and has authored a large number of classified reports.

After graduation from UC-Berkeley, Bill Murray was employed by the C.F. Braun Company in Alhambra, California, from June, 1947 to June, 1949, in the design and specification of electrical systems for hazardous atmospheres in oil refineries and chemical plants. He was next employed by Douglas Aircraft Company in Long Beach, California, where he designed and flight tested electrical and communications systems for the C-124B Globemaster aircraft, which later received high marks for its role in the Berlin airlift. In September of 1948, Bill commenced an MSEE program at the University of Southern California (USC).

Bill had maintained active reserve status as a First Lieutenant in the United States Army Signal Corps and he was in the third California reserve unit recalled to active duty in September, 1950, after the Korean War began. He served in the 322nd Corps Signal Battalion in Fort Bragg, North Carolina and in the area from Frankfort-am-Mainz to Stuttgart, Germany, until May, 1952. Bill spent the winter of 1951-52 on maneuvers in the snowy mountains of southern Germany where he was responsible for all radio operations and radio relay communications between the headquarters of the V Corps, 7th Army, V Corp Artillery, and three Infantry Divisions (the 1st, 40th, and 44th Divisions).

Bill started a nine-year employment period with the Los Angeles Department of Water and Power upon leaving active military service. He worked in the Power Design and Construction Division, on overhead, underground, and tract power distribution, freeway and street lighting, steam plants, hydroelectric plants, receiving and distribution station design, and general facilities such as the new Water and Power Building. He also completed his MSEE degree at USC in January of 1954.

In April of 1961, Bill yielded to the appeals of both the new United States Space Program and his previous supervisor at the Douglas Aircraft Company. He rejoined the company and has been employed in several divisions of McDonnell Douglas Corporation until the present day. He worked as a Section Chief for electrical systems on missiles, including the Nike-Zeus, Skybolt, Thor/Delta, and numerous advanced missile systems. He then worked on manned space programs, including Advanced Space Technology, MORL, MOL, Saturn IV, ATM, Skylab, Space Tug and the early Space Station, and he was Branch Chief for electrical systems on the Space Station Program.

In April, 1974, when the Space Station was deferred during Space Shuttle development, Bill transferred from the McDonnell Douglas Astronautics Company to the Douglas Aircraft Company. There he worked in design and support engineering for the DC-10, KC-10, and MD-80 aircraft, and for numerous advanced aircraft programs. These included the Ultra High Bypass (Propfan), the new MD-11 commercial transport aircraft now in its certification flight program, the giant C-17 Air Force transport, and several future aircraft, including the advanced MD-90 commercial transport, the conceptual MD-12X, the supersonic High Speed Civil Transport, and many other advanced conceptual aircraft designs and applications. Concurrently, he has been Principal Investigator for IRAD projects for the past sixteen years, in addition to his aircraft design responsibilities as a Principal Engineer/Scientist, then Senior Staff Engineer, Principal Staff Engineer, and now as Principal Technical Specialist in Design Engineering. Bill completed thirty (30) years of service for the McDonnell Douglas Corporation on April 3, 1990. Concurrently, Bill received many honors from the McDonnell Douglas Corporation, from NASA, from IEEE, and from Eta Kappa Nu. He also taught engineering classes for the past thirty years.

Bill was privileged to serve during the past fourteen years in continuous leadership positions in IEEE, including Chairman of the 4000-member Orange County Section, Chairman of the 15,000-member Los Angeles Council, General Chairman of the 1982 Region 6 Conference, and four years as a WESCON Director. He was Convention Director for WESCON/88, which was attended by an estimated 55,000 professionals and presented more than 1800 booths and 149 technical papers in 37 sessions. He is presently Chairman of the Executive Committee for WESCON/90, scheduled to fill the Anaheim Convention Center in Anaheim, California, on November 13-15, 1990. Bill is a Life Senior Member of IEEE and was awarded the IEEE Centennial Medal in 1984.

Bill served Eta Kappa Nu as President of the Los Angeles Alumni Chapter after several years in the lower offices, then as National Director for two years, as National Vice President, then as National President in 1973-74. He has served on the Outstanding Young Electrical Engineer Award Organization Committee for the past seven years and on the Outstanding Electrical Engineering Student Award Committee since its conception in 1963, with the first award given in 1965. As noted previously, Bill was most highly honored by receiving the grade of Eminent Member of Eta Kappa Nu in 1987.

Bill has taught engineer-in-training and professional electrical engineering registration courses at UCLA, UC-Irvine, California State University at Northridge, Bechtel Corporation, Golden West College, and the Adult Education Division of the Los Angeles Department of Education over the past thirty years.

Bill is a Fellow of the Institute for the Advancement of Engineering. He is a registered Professional Electrical Engineer in California and holds a Life Certificate for Engineering Education in California. Bill received six Citations for Technology Advancement from NASA and six Citations for Professional Achievement from the McDonnell Douglas Corporation. He has published and presented eight engineering papers on the subjects of Space Station design, aircraft electrical systems, lightning phenomena, and lightning protection. He is listed as a Contributor in the Standard Handbook for Electrical Engineers, Twelfth Edition, 1987, edited by D.G. Fink and H.W. Beaty. In addition, he has written and presented more than fifteen internal McDonnell Douglas Corporation annual IRAD research reports.

Alan Murray has maintained many special and active interests and skills, in addition to his professional research activities. These include music performance, distance running, golf, contract bridge, gymnastics (which he began at Stanford University), springboard diving, juggling, advanced computer skills, languages, and mathematical puzzles, including the Rubik's Cube, which he solves sight-unseen, to the observers' considerable amazement!

It is appropriate to provide recollections and events which may give some insight and understanding of the special gifts and skills which Alan has been granted, and how these originated and were identified and developed.

At a very early age, perhaps five or six years, Alan showed a growing interest in solving problems, analyzing rather complex concepts and theories, delving into workbooks on mathematics and science, exploring technical books, and participating in athletic competitions. He asked fewer questions than one might expect from a person with his breadth of interests and curiosity; rather, he preferred to follow the process of reading and research. It was soon evident that

he possessed that rare gift which is popularly known as "photographic memory". In addition, he demonstrated an unusual talent for combining analytical perception and logical reasoning with the unique ability to process numerical and mathematical problems in his mind, then to write out the answers. This talent has been very startling to many of his contemporaries.

Alan has four older brothers who were always encouraging and challenging him by giving him opportunities to learn new skills and to develop new interests and experiences, and they were always very proud of his achievements. In this way, he developed his musical and athletic interests and skills at a very early age. He "discovered" his father's professional library of engineering and science and found many resources in his brothers' school books. He preferred books that were technical and much more advanced than those of his peers at every age. He exhibited unusual skills in analysis, perception, deductive and inductive reasoning, memory, creativity, intellectual honesty, and physical coordination. Soon he was learning and applying knowledge from high school, then college, then professional level mathematics and science. There appeared to be no limit to his intellectual appetite or to his ability to remember and to use complex information. He observed at a rather early age that "'obstacles' are only disguised opportunities for achievements."

Through all his life, Alan had frequent opportunities to observe and to participate in the Eta Kappa Nu meetings, parties, barbeques, and outings which the Los Angeles Alumni Chapter enjoyed for many years in its very active social and professional programs. Many of those members who influenced Alan have been National Directors and National Presidents. As the years passed and Alan continued his achievements and his contacts with the high-quality members of Eta Kappa Nu, there can be no doubt that there was a positive and constructive influence exerted by our Eta Kappa Nu members and their families. In addition, he was particularly impressed by the achievements of those who Eta Kappa Nu recognized by our award programs. Brother Paul Hudson had observed many times that "Alan should some day become a member of Eta Kappa Nu." It was, therefore, a very special day in July, 1989, when Alan was inducted as a professional member and became a brother to his father. The only regret was that Brother Paul Hudson could not be present to share in Alan's family's joy.

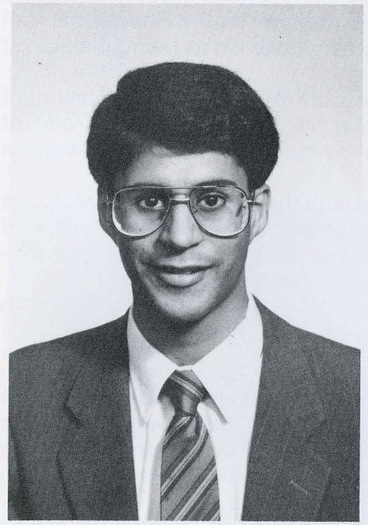
THE
ALTON B. ZERBY
OUTSTANDING ELECTRICAL ENGINEERING
STUDENT AWARD
1990

Anaheim, California
July 28, 1990

Text by
Marcus Dodson

THE ETA KAPPA NU ASSOCIATION
1990

Student Award Winner



THE
ALTON B. ZERBY
OUTSTANDING ELECTRICAL
ENGINEERING STUDENT
AWARD
1990

ASHOK KUMAR
Winner

Won expense-paid trip to Emerald of Anaheim Hotel in Anaheim, California and an Award Dinner in his honor, from the Alton B. Zerby Perpetual Memorial Trust established by the Eta Kappa Nu Official Family, and a monetary gift from the Carl T. Koerner Perpetual Memorial Trust established by Edith Ann Koerner.

ASHOK KUMAR graduated summa cum laude with a GPA of 3.98, ranking first in a class of 260 EE seniors, was nominated by the Iota Upsilon chapter at University of Washington at Seattle. He is a member of IEEE, SWE, India Association and the Foundation for International Understanding Through Students and has been honored with membership in Tau Beta Pi, Mortar Board, Golden Key as well as Eta Kappa Nu.

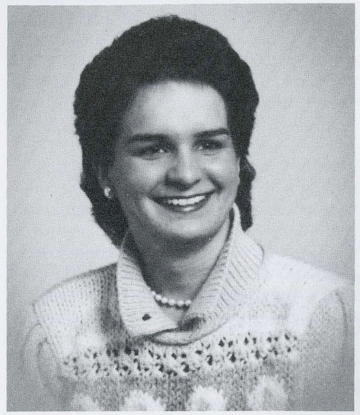
He wrote and presented a paper "Laboratory Digital Results on ISDN Loops and Impacts on Basic Rate Interface Maintenance" while at AT & T Bell Laboratories. He also worked on, with others, a PDP-11 Simulator on a TI EVM Microprogrammable Processor.

Mr. Kumar has been an active officer in Tau Beta Pi, SWE, IEEE, organizing technical conferences with the profession and self improvement seminars covering subjects such as interview techniques, leadership, resume writing, proper attire, etc. He founded a chapter of the India Association and served in various capacities in its activities of social, religious, information and holiday functions. The Society of Women Engineers bestowed on him their "Outstanding Service Award" for his activities in and contributions to their organization. In Eta Kappa Nu he helped to charter the Iota Upsilon Chapter and to organize initiation policies, office space, a class evaluation system and a jobs seminar.

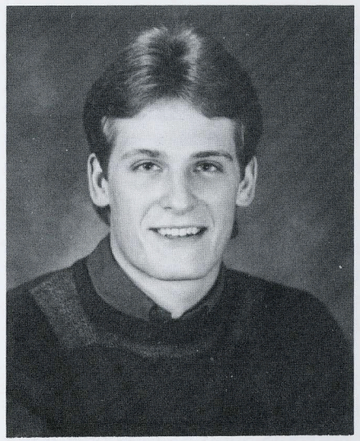
While at AT & T Bell Labs he performed digital testing on ISDN loops, analyzed relationships between transmission error parameters and line faults and evaluated maintenance performance. At IBM he developed software for confidential programs, performed and coordinated testing procedures.

His hobbies include Indian dance, swimming and stamp collecting.

HONORABLE MENTION



Becky Lynn Dancy
Honorable Mention



Timothy Gene Kelley
Honorable Mention

Becky Lynn Dancy graduated summa cum laude with a GPA of 4.0, ranking first in her class of 341 EE seniors, was nominated by the Gamma Theta Chapter at the University of Missouri - Rolla. She is a member of IEEE, Phi Eta Sigma and has been honored with membership in Phi Kappa Phi, Tau Beta Pi, as well as Eta Kappa Nu.

She served as advisor to the Chancellor's Leadership Class, a weekly meeting with the Chancellor of the University and invited faculty/corporate guests. Also she was involved in campus service activities, including serving as chairperson for the Residential Hall Food Committee and community service, such as being the pianist for a local church.

At AT & T her work in the Network Architecture & Investment Planning area was to develop a tracking system for Point of Presence deployment and to revise the network viewgraph presentation.

Miss Dancy has been honored with the A.P. Green Refractories Medal for the outstanding graduating senior in the School of engineering as well as national recognition by the National Engineering Consortium with their William L. Everett Award.

Intramural sports was her hobby. She was team captain in football, softball, basketball and badminton.

Timothy Gene Kelley graduated summa cum laude with a GPA of 4.0, ranking first in a class of 168 EE seniors, was nominated by the Gamma Iota chapter at the University of Kansas. He is a member of IEEE and has been honored with membership in Phi Kappa Phi, Tau Beta Pi and Eta Kappa Nu.

He did research with a member of the faculty and the result was a paper "Utility of Error-Correcting codes in Local Area Network Congestion Control Environment." He is proficient in Pascal, Fortran and Basic computer languages.

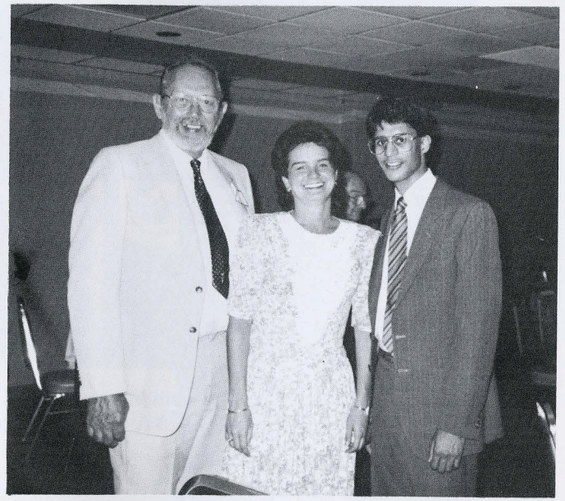
Mr. Kelley was a proctor for his residence hall and active in his church. He went to Basehoe, Kansas to assist in cleanup of community graffiti.

He received national recognition by the National Engineering Consortium with their William L. Everett Award.

He enjoys participating in sports such as golf, football and softball. For quieter times he likes music — both listening and collecting.

FINALISTS 1990

David Lee Bartholomew ..... Ohio University
Herman Chung-Kang Chui ..... Rice University
Berry Tod Cox ..... Texas A & M University
Wu-chi Feng ..... Pennsylvania State University
Amir Nathaniel Penn ..... University of Cincinnati
Ralf Seip ..... Florida Institute of Technology
Ritu Singh ..... University of Tulsa
Sandra Marie Tretter ..... Purdue University



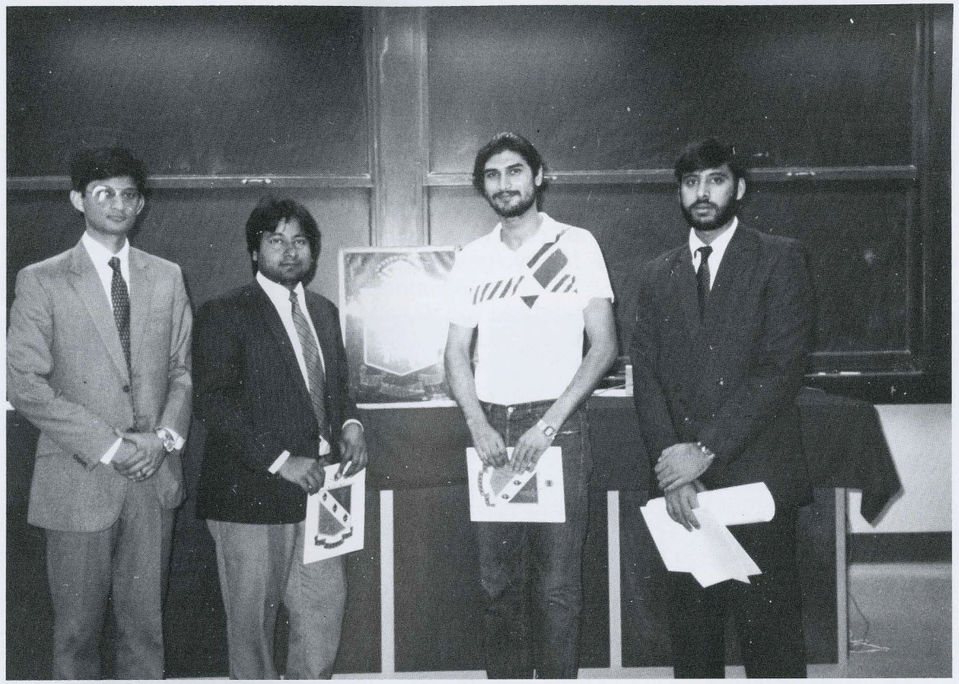
Photos: Top left, 1990 HKN President, Robert Arehart, presents Winner's Certificate to Mr. Ashok Kumar; Top right, Koerner Award Sponsor, Mrs. Edith Koerner, congratulates Mr. Kumar; Center left, President Arehart presents Honorable Mention Certificate to Becky Lynn Dancy; Center right, Zerby Program Chairman, Marcus Dodson, with winners, Kumar and Dancy ; Bottom right, Spontaneous smiles and applause break forth at this already warm and festive occasion when for dessert there is CHERRIES-JUBILEE!

Banquet Photographs by Ada Dodson.

Iota Pi Chapter Installed

California Institute of Technology

Photographs by Ada Dodson.



Charter Chapter Officers: From left to right, Khurram K. Afridi, President; Ghufran Ahmed, Vice-President; Mohammad Azeem, Treasurer; and Syed Zubair Ahmad, Corresponding Secretary.

On April 15, 1989, a special team of installing officers representing the Los Angeles Alumni Chapter of Eta Kappa Nu traveled to Pasadena, California to initiate the charter members of the Iota Pi Chapter of Eta Kappa Nu and to install this important new chapter. The Official Charter was presented to the new chapter members and the chapter officers were identified.

The Los Angeles Alumni Chapter of Eta Kappa Nu had provided the necessary liaison assistance in the development of this new chapter. Dr. William Bridges had served as the university's coordinator of the development effort and agreed to continue serving as Faculty Advisor to the charter chapter members.

The occasion was marked by the initiation of twenty-five new members. These new members as of Spring Semester 1989 were: Khurram K. Afridi (President), Ghufran Ahmed (Vice-President), Viola C. Ng (Recording Secretary), Mohammad Azeem (Treasurer), Syed Zubair Ahmad (Corresponding Secretary), Julie A. Sheridan (Bridge Correspondent), Babak Ayazifar, Paul A. Bonenfant, Peter D. Capofreddi, Christopher M. Chu, David J. Colello, Michael J. Freeman, José M. Gonzáles, Robert A. Hawley, Wolfgang M.J. Hofmann, Richard C. Hsu, Douglas Huang, Maneesh Jain, Ronald C. Kong, Amit Lal, Angela T. Lee, Po King Li, Philip J. Lin, Terence D. Yeh, and Zulfiquar Sayeed.

In looking toward the future and the further development of the chapter, the new members were enthusiastic and optimistic. They are committed to the necessary hard work that may be required to accomplish the envisioned expansion. Chapter activities that will be of benefit to others are being planned.

Charter Chapter Members being initiated by the Installing Officers.

Chapter Installation Team: From left to right, Dr. Richard Cockrum; Mr. Marcus D. Dodson; Mr. Robert J. Kennerknecht; Mr. William Murray; and Mr. Donald S. Stoica.

OUTSTANDING CHAPTER AWARDS for 1988–1989

by Alan Lefkow, Chairman

Because of the outstanding quality of the Chapter Activities Reports, 1988-89, received from the Runner Up (Delta Omega Chapter at the University of Hawaii) and the Winner (Beta Chapter at Purdue University), BRIDGE decided to reprint both reports in 50%-reduction size so as to display four report-pages per one BRIDGE-page and to feature these reports in the August 1990 and November 1990 issues of BRIDGE. Featured in this issue is Beta's Winning Report.

It is hoped that these reports will serve as helpful and encouraging examples to all chapters including the winning chapters themselves.

HKN

1988 1989
Annual Report

βeta Chapter

Eta Kappa Nu
Purdue University

If nothing else we hope to convey with this annual report the fun and lasting reward we received while representing HKN, our school and our chapter while striving to maintain our reputation as "The Nice Guys" of Eta Kappa Nu.

Respectfully submitted,

Kenneth R. Green
President — Spring 1989

James E. Lumpp, Jr.
President — Fall 1988

A Letter From The Presidents

This has been one of the most active, exciting and productive years in Beta chapter's recent history. The success has been possible thanks to the support of the School of Electrical Engineering and increased involvement by the membership of Beta chapter.

Involvement in any organization comes at the expense of dedicating valuable time. In the case of a college organization like HKN, this commitment comes out of the already overbooked schedules of students and faculty. We know, however, that the time taken to help those around you and to become involved in the school and community yields rewards far greater in value.

This year we were involved in more new projects and on such a large scale that some of the other things Beta has always been involved in became somewhat overshadowed. Yet, we were able to continue all of the projects Beta is known for as well as start new projects by drawing on the resources of our membership and support from the school. All of this new activity, in addition to the old, prompted the naming of Beta chapter as the Vicki Michelson Memorial Award Best Engineering Society by the Purdue Engineering Student Council. We were extremely honored to receive this distinction which is awarded to honor the "most improved" engineering society on the Purdue campus. In the past, due both to the large size of Beta chapter and the large number of ongoing projects it is involved with, it has been difficult to achieve this distinction. To "improve" the quality or quantity of the services we provide or activities we are involved in took a great deal of effort by an even greater number of individuals. Much of the increased activity centered around two projects, The Electrical Engineering Centennial Celebration and the Electrical Engineering Student Lab Project, two projects we are extremely proud to have been a part of.

As presidents this past year we came to realize just how much we all depend on one another to carry out all the things Beta does. We would like to thank all those who contributed their time and abilities, from the advisors whose advice, wisdom and encouragement were invaluable, to the membership which is truly the most valuable resource Beta possesses. Beta's membership provided valuable guidance for the organization through the opinions voiced in the meetings and the votes cast on the important issues, not to mention their service on committees and in keeping the lounge going through serving weekly lounge duty.

We would especially like to thank our officers, whose extraordinary dedication, extra effort and hard work made Beta chapter something very special to be associated with. The officers were always there, as a source of leadership and enthusiasm for every project, big or small. We will always remember the times we have shared, the things we have accomplished and the friendships established.

Table Of Contents

The Year at a Glance 4
The Officers and Advisors 6
EE Centennial Celebration 10
HKN Committees 12
Meeting Nights 18
The Lounge 20
Financial Summary 23
Industrial Relations 25
Service 26
Social Activities 29
Looking Ahead 33
Beta Chapter Alumni Newsletter ..... Appendix A
Student Laboratory Proposal ..... Appendix B

1. The Year at a Glance

In a quest to further serve our fellow students, our school, the surrounding community and the profession Beta chapter added a number of new projects this year. We are proud to report all of the new activities were possible without compromising the quality or quantity of any of our ongoing projects.

New this year were two exciting projects which consumed more time and resources than any other projects with the exception of the management of the Electrical Engineering Student Lounge. Beta chapter had the opportunity to serve the students and School of Electrical Engineering by helping the school celebrate its 100th birthday and through the formation of an Electrical Engineering student electronics laboratory run by HKN.

Beta played a major role in celebrating the EE Centennial. From the logo design contest which took place in early 1988 to tours given the day of the celebration, Beta chapter was there giving support and working closely with the school's Faculty Centennial Committee. In addition, Beta chapter submitted a formal proposal and was granted 325 square feet of space near the existing lounge to provide a student electronics laboratory facility available to all students and faculty. Filled with the latest state-of-the-art equipment donated from corporate sponsors, the lab promises to be a valuable addition to the facilities of the school. Both the lab and centennial will be described in later sections of this report.

Several other new projects of substantial size were also started this past year. These include a project which has been a goal of Beta for years, the creation of The Beta chapter Alumni Newsletter which is sent to the alumni of Beta chapter every semester to keep them up to date on their alma mater, the School of Electrical Engineering and Beta chapter. In addition, Beta chapter completed another project which had received much attention in actives meetings over the past year, with some discussions lasting well into the night after the meetings were adjourned. This effort paid off, however, as Beta completed a revision of its bylaws which we feel accurately reflects the policies and procedures of Beta chapter.

Along the lines of social activities, Beta chapter was the *first* in line for football tickets for the season and supported the team with a block of over 70 screaming supporters on the 45 yard line! A new tradition of which we are quite proud is known as the "Hamburger Happy Hour." Each semester at five o'clock on one nice Friday afternoon, Beta chapter invades the front lawn of the Electrical Engineering building with grills, frisbees, brats, hamburgers and all the fixin's in hand and gives away free food and cokes to everyone who passes by. The Dean of the Schools of Engineering even stopped by to say "hi" and enjoy some fun in the sun. Beta also had teams representing it in the Purdue Engineering Student Council basketball and volleyball

tournaments. Both Teams finished with 500 records and a determination to "win it all" next year.

Also new this year are: the addition of a full set of Unix manuals to the student lounge near the existing terminals, the purchase of a Nikon 35 millimeter "point and shoot" camera to capture those special moments at HKN functions, the purchase of a new shopvac for both wet and dry cleanups in the lounge, and a new set of graduate school catalogs available to the public from a number of top schools in the country.

Beta also continued all of the projects which they are known for in the School of Electrical Engineering at Purdue. Several of these services are provided for our fellow students. Our Industrial Relations Chairman again organized a group plant trip to McDonnell Douglas attended by over 30 students of the School of EE. The Industrial Relations Chairman also arranged technical presentations by industry representatives which take place preceding every bi-weekly actives' meeting. The Resume Book Committee published the Electrical Engineering Resume Book which contained over 250 EE students' resumes and was distributed to over 100 companies, and the Scholarship Committee awarded scholarships to several outstanding students. The Awards Committee recognized a number of students for academic excellence and social involvement through of our annual awards. Again this year, Beta gave away discrete components and a full line of TTL components, from 7400 series chips to MC60000 microprocessors, all *free* of charge. Beta also maintained a fairly comprehensive supply of manufacturers' data books rivaled only by the Purdue Engineering Library. To help students cope with college life, and particularly life in Electrical Engineering, Beta published the "Student Survival Guide," which is sold in the lounge for a cost much less than that of the paper it is printed on.

The School of Electrical Engineering also benefited from the many services which Beta provides. Beta chapter's biggest project was the Electrical Engineering Student Lounge. With an annual cash flow of nearly 60 thousand dollars a year, the lounge did more business on weekdays than some small convenience stores! The lounge required over 100 man-hours a week to run and was manned by the active membership of Beta. Active members also volunteered their time to conduct High School Day tours, helped with new graduate student orientation, maintained homework solutions for Electrical Engineering classes, and maintained a photocopier and laser printer which HKN has made available for public use. In addition, Beta worked with the School to contact alumni during the Electrical Engineering Phone-A-Thon. Beta declined the school's gracious offer of 10% of the proceeds which would have totaled over $4,400. We also maintained the composite pictures of each graduating class of the School of EE, the pictures of all the faculty of EE, and the "Meet Professor..." pictures and articles posted in the EE building. The school also relied on Beta to manage the EE Centennial Tower

and EE Centennial Celebration projects, each of which were organized by HKN committees.

Our community service committee organized the Thanksgiving Food Drive which involved collecting donations from the students and staff of the university, shopping for food, assembling food baskets and delivering them to over 50 needy families in the greater Lafayette area. We also had two group trips over to the Lafayette Food Finders Food Bank to help sort the volumes of food donated for needy families in the area. Beta also contributed the lounge proceeds of an entire day each semester to a local soup kitchen. We donated canned goods and approximately $1,200 last year.

Beta has also had a number of activities to provide a brief escape from studies. These events include the many TGIF pizza parties, each with a different theme, two picnics, a canoe trip, basketball and volleyball teams, and the Take-A-Prof-To-Lunch Committee which allows the students and faculty to interact in a somewhat more informal atmosphere.

Initiating all of this new activity, while still maintaining all the other services and activities Beta chapter is involved in, prompted the awarding of Beta chapter with the Vicki Michelson Memorial Award Best Engineering Society on campus award. This award is given on the criteria of "most improved" engineering society on the Purdue campus by the Purdue Engineering Student Council. Beta chapter is very proud of this recognition of its efforts.

2. The Officers and Advisors

The success of any large, active organization such as HKN Beta chapter depends heavily on its officers. The officers' responsibilities reach well beyond the numerous daily tasks of maintaining the financial records or keeping the lounge running. The officers are responsible for many large tasks such as the organization of the pledge social and the initiation banquet. Furthermore, the officers often volunteer extra time to serve on overloaded committees or to lend a hand on a number of special projects. It takes a special person to manage the responsibilities of being an officer of Beta chapter along with the studies of a college student. Many offices in HKN come close to 20-30 hour a week part time jobs! The people who serve as officers are truly dedicated individuals.

The list of officers that served during the 1988-1989 school year is shown below.

Fall HKN Officers
Top: Alex Neudeck, Scott Thomas, Jim Lumpp, Eddie Nieters
Bottom: Mike Humes, Kirk Yang, Corinne Wuerthner, Ken Green, Todd Deckard

Office	Fall, 1988	Spring, 1989
President	Jim Lumpp	Ken Green
Vice President	Ken Green	Kirk Yang
Treasurer	Kirk Yang	Sandra Tretter
Recording Secretary	Todd Deckard	Mandi Barrett
Pledge Trainer	Eddie Nieters	Angela Hoyt
Workshop Chairman	Scott Thomas	Chock Gan
Lounge Secretary	Mike Humes	Curt Shrote
Social Director	Alex Neudeck	Aditya Khorana
Industry Secretary	Corinne Wuerthner	Mike Branson

Spring HKN Officers
Chock Gan, Aditya Khorana, Sandra Tretter, Ken Green, Mandi Barrett, Angela Hoyt, Kirk Yang, Curt Shrote, Mike Branson

The Executive Committee, formed from past HKN officers, provided a base of knowledge and experience from which the current officers drew advice and support. The experience of the previous officers provided immeasurable aid to the less experienced officers as they worked to maintain continuity and successful operation from semester to semester. The members of the executive committee are listed below.

Executive Committee Members

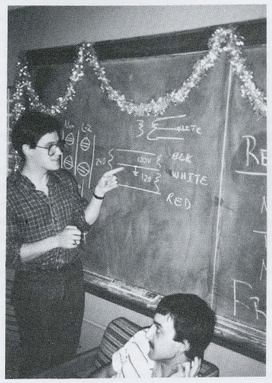
Mark Bettinger	Glenn Colon-Bonet	Todd Deckard
Bruce Ferguson	Fred Giles	Ron Harber
Mike Humes	Rich Kulawiec	Jim Lumpp
Cheryl Nash	Greg Pavlik	Mike Phillip
Kirk Smith	Frank Weil	Corinne Wuerthner
Carla Zoltowski		

An indispensable source of leadership came from Beta chapters EE faculty advisors. Each semester, the officers, executive committee, and faculty advisors meet to discuss the current status of the chapter and to determine its future direction. The interaction with the faculty not only allows our chapter to work with our school when planning

events but also gives us new ideas and approaches for services. We were especially proud to have had our head advisor, Prof. David G. Meyer, named to the national board of directors of Eta Kappa Nu.

The faculty advisors for Fall 1988 and Spring 1989 are listed below.

Professor David G. Meyer, head advisor
Professor Paul C. Krause
Professor John A. Nyenhuis
Professor Hannis W. Thompson
Professor Mike D. Zoltowski



"Christmas Lights 120 or 240?" An ExecComm member provides the officers with valuable information

3. EE Centennial Celebration

The 1988-1989 school year marked the 100th anniversary of the creation of the School of Electrical Engineering at Purdue University. Considering Beta chapter's past contributions to the school, it seemed only natural that we would get involved in the EE Centennial Celebration in a big way !

Beta chapter's involvement in the Centennial Celebration actually began during the previous school year when it sponsored the EE Centennial Logo Design Contest. The winning design (worth $500 to the winning artist) was used in the design of a number of Centennial memorabilia items, including sweatshirts, T-shirts, coffee mugs, glass tankards and keychains. These mementos were sold outside of the EE Student Lounge and to alumni through a mail order service. Demand for these items was tremendous and by the time Centennial sales were concluded, over 1,800 items had been sold. A summary of Centennial sales follows.

Item	Amount Sold
Sweatshirts	655
T-Shirts	680
Coffee Mugs	270
Glass Tankards	142
Keychains	137
Total	1,884

These sales resulted in a net profit of approximately $4200. It was decided that the money raised through the sales of Centennial merchandise would be used in a way that would benefit the entire student body of the School of Electrical Engineering. With this in mind, the Centennial profits have been earmarked for use as seed money for the new EE Student Lab which Beta chapter is currently in the process of establishing.

As the Centennial Celebration weekend approached, the HKN Centennial Committee became more involved with plans for several "special" activities. With the assistance of the school, the chapter assembled an "Old Time Lab," was be featured in tours given to visiting alumni. This exhibit contained a collection of some of the earliest instrumentation used in the school's laboratories. Included in the display was one of the first commercially produced oscilloscopes, a spring-scale ammeter, a vacuum tube chart, and a relay logic counter. This exhibit proved to be popular with both alumni and students, who had the opportunity to get a glimpse of the world of electrical engineering before the days of 32-bit microprocessors, robotics and fiber optics.

As the Centennial weekend approached, the Beta chapter Tower Committee worked to complete production of the EE Radio Tower Pieces. These mementos consisted of small pieces of two 60-foot radio towers which were once located on the roof of the Electrical Engineering building. Because these towers were at one time a very prominent landmark on campus, the school suggested that they might be a nice item to make available to alumni. With this in mind, a number of Beta chapter's talented artisans began the huge task of cutting the towers into six inch lengths, sandblasting and polishing the cut pieces, and preparing decorative plaques on which to mount the mementos. After hours of dedicated work in the school's machine shop, the Tower Committee successfully completed five dozen of the tower pieces.

Several months before the celebration was to take place, several members of the Centennial Committee were invited to join the School of Electrical Engineering's organizing committee. While serving the school in this capacity, these individuals were able to contribute to the planning of tours of the EE facilities, coordinate a student volunteer effort for the celebration weekend, and assist the faculty in providing Centennial activities for the students.

Finally, the Centennial Celebration weekend arrived. Because of all of the hard work on the part of all involved, the celebration was a stunning success. Alumni from as far back as the class of 1927 visited campus for the event. The highlight of the Centennial Celebration weekend was the grand opening of the new Materials Science and Electrical Engineering building. This event featured presentations by Indiana Governor Robert Orr, Purdue President Steven Beering, and Beta chapter Centennial Committee Chairman Bruce Ferguson, who represented the student body at the ceremonies. Following the dedication of the new building, the Centennial Celebration moved inside for a banquet and ball.

The EE Centennial project was certainly the largest undertaking of Beta chapter in recent years. The amount of time and effort put forward by many actives contributed to the ultimate success of the event. Everyone agreed that they couldn't wait to see what the EE Bicentennial would be like!

"Get 'em while they last!" HKN actives staff the centennial sales table.

4. HKN Committees

In order for Beta chapter to accomplish all that it does every year a number of committees have been created. During the first meeting of each semester, members volunteer to serve on each of the committees. Each committee selects a chairman who is responsible for organizing meetings, updating the President on committee activities, and most importantly, making sure that everyone who would like to get involved in Beta chapter's many activities has the opportunity to do so. A brief description of each committee follows.

Alumni Committee:

In order to keep the Beta alumni up to date with the university, the school and the activities of HKN at Purdue, the chapter began publishing a bi-annual newsletter. During the spring semester, the Alumni Committee collected articles concerning recent activities such as the Thanksgiving Food Drive and Centennial Celebration. In addition, in order to keep the list of alumni names tractable, the committee created an alumni database program which it then filled with names from old HKN records and an electrical engineering alumni index. After much hard work and preparation by all of its members, the committee published the first newsletter in the spring of 1989. A copy of the first alumni newsletter is included as an appendix to this report.

Awards Committee:

Over the past several years, Beta chapter has been honored to have its nominees for awards achieve local and national recognition. Beta chapter has nominated several honorable mention recipients in the national HKN awards competitions. In 1987, Beta chapter's head advisor, Professor David G. Meyer was the recipient of the C. Holmes MacDonald Outstanding Teaching Award. The Awards Committee is responsible for screening eligible applicants and nominating them for these prestigious awards. The committee also administers several local awards, such as the Elias Sabbagh Outstanding Senior Award, which is a cash award established by the family of Dr. Elias Sabbagh, a former professor of the School of Electrical Engineering. This year the committee added a new award to both honor a dedicated member and to encourage others to follow in his example. The "Ronald G. Harber Exceptional Chapter Service Award" is awarded to members who distinguish themselves through service to Beta chapter. The award is only given when it is the opinion of the committee that an individual has exceptionally distinguished themselves over an extended period of time.

Centennial Committee:

The members of the Centennial Committee were quite busy during the fall semester. As previously described, this committee was responsible for organizing a substantial part of the school's Centennial Celebration. This included the production and sales of Centennial shirts, mugs and keychains, as well as the preparation of the "Old Time Lab." Once the celebration was complete, the committee continued work on the mail order service provided for out of state alumni who wished to purchase Centennial memorabilia. Without the uncommon dedication of the members of this committee (most of whom have recovered by now), the Centennial Celebration could not have been the success that it was.

"Souvenir Hunters" Centennial Committee members attempt to make off with the corner stone at the dedication of the new Materials Science and Electrical Engineering Building

Community Service Committee:

The Community Service Committee was formed in order to find a replacement for the chapter's involvement in the annual March of Dimes Haunted House, which was discontinued in the fall of 1987. This committee is responsible for arranging and staffing all of Beta chapter's community service projects. This fall, the committee organized the second annual Thanksgiving Food Drive. Once again, through both monetary and food donations made by EE faculty, staff, and students, Beta chapter was able to hand deliver 50 complete Thanksgiving food baskets. These packages included whole frozen turkeys, baking pans, pumpkin pies, and all of the other ingredients of a traditional Thanksgiving dinner. The committee also organized several trips to the local Food Finders Food Bank, where actives donated several hours of their time to help sort free food for the needy. As always, Beta chapter designated one day each semester as "Soup Kitchen Day," when all of the proceeds from the lounge were donated to a local soup kitchen in Lafayette. This year, we were able to donate over approximately $1200 to the soup kitchen.

Homework Committee:

As a service to both professors and students, Beta chapter keeps solutions to course homework problems available for student use in the lounge. At the beginning of

the semester, the Homework Committee announces the service to professors, accepts and binds solutions provided by professors, and maintains the solution books in the lounge free of charge.

Lab Committee:

Beta chapter's newest committee was formed in the fall of 1988 in order to address a problem which Beta felt had existed in the school for several years. The students of the School of Electrical Engineering have always been provided with excellent laboratories for their formal course work; however, no well equipped facilities existed for students to experiment on their own or to work on private electronics projects. Realizing that access to this type of hands-on experience is fundamental to a student's understanding and enjoyment of electrical engineering, Beta chapter decided to propose to create and manage a student laboratory, which would be provided for general use to all EE students and staff. The members of the Lab Committee were given the task of developing a detailed formal proposal for such a facility which was to be presented to the School of Electrical Engineering. The proposal was to address such matters as space allocation, lab capabilities, sources of equipment, and lab management, safety and security concerns. Along with the development of the proposal, the committee circulated a petition among the student body in order to publicize and show popular support for the lab. Finally, several members of the committee met with the Head of the School to formally present the student laboratory proposal. The school was very receptive to the idea of a student lab and granted Beta chapter 325 square feet of the most valuable commodity on a college campus, *space*, in addition to the space the lounge currently occupies. The school also agreed to work with a standing Lab Committee to contact corporate sponsors and contributors of equipment and money for the lab. The coming year will be a very busy one for the Lab Committee, as it will be responsible for the awesome task of establishing and then managing the new lab.

An enormous amount of work and consideration went into the proposal and planning of the student lab. The Lab Committee was split into several sub-committees each of which attacked a different phase of the proposal, from floor plans and detailed proposed equipment lists to considerations of access to and security of the equipment. All of this came together to produce a comprehensive proposal which was accepted by the school. A copy of the formal proposal which was submitted to the School of Electrical Engineering is included as an appendix to this annual report.

Laser Printer Committee:

Several years ago, the EE department assisted Beta chapter in purchasing an Apple LaserWriter for general student use. This printer is currently located in the lounge and is available to students on a pay-per-page basis. The members of this committee are responsible for updating student accounts on a daily basis and for performing preventive maintenance on the printer itself. Income generated from this project is used to reimburse the school for the cost of the printer and to purchase supplies such as paper and toner cartridges.

Resume Book Committee:

One of Beta chapter's most important projects for the EE student body is the publication of an annual EE Resume Book. The book is open to all students in the School of Electrical Engineering. Resumes are submitted to the book by running a program installed on the Engineering Computer Network. Last year, 266 undergraduate and graduate students entered a resume in the book, which was purchased by approximately 100 companies at a cost of $40 per book. The members of this committee are responsible for all aspects of the book's publication, from publicizing the book to both students and companies, to maintaining the software which is used to format the book.

Scholarship Committee:

Each spring semester, Beta chapter, with the support of several corporate sponsors, awards a number of academic scholarships to deserving undergraduate students in the school. This year, over $5000 was awarded to three talented and active students! The scholarship committee is responsible for administering the scholarships and seeking out corporate donors in order to fund the program. Early in the spring semester, the committee provides applications to all interested Juniors and Seniors. It then works in conjunction with the sponsoring companies to select winners of the various awards. This years scholarships were made possible by the generosity of the Hughes Aircraft Company and Delco Electronics.

Take-A-Prof-To-Lunch / Brown Bag Lunch (TAPTL / BBL):

The goal of the TAPTL program is to provide students and faculty with the opportunity to get to know each other outside of the classroom. Several times during the semester, the committee contacts professors who are interested in attending an informal lunch with students at a local establishment. Then, the committee publicizes the event and makes all eating arrangements, including providing lunch for the professors. This committee is also in charge of organizing Brown Bag

Lunches. The BBL's are intended to give students a chance to learn about the various research interests of faculty. The committee is responsible for contacting interested faculty, reserving a room in the EE building, and providing sandwiches and soda for all of those who attend the presentation.

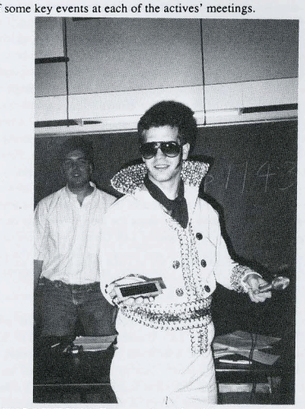
Tower Committee:

The Tower Committee (or Tower Commission, as they called themselves) was formed in the spring of 1988 in anticipation of the Electrical Engineering Centennial Celebration. This committee was responsible for converting portions of two 60-foot radio towers which were once located on the roof or the EE building into mementos commemorating the school's centennial. This massive effort involved cutting, cleaning, sand-blasting and mounting pieces of the tower onto decorative plaques. By the time the Centennial Celebration began, over 60 tower pieces had been completed, with over 200 remaining in various stages of the production pipeline. After the celebration was over, the remaining tower pieces were turned over to the School of Electrical Engineering, which now issues the mementos to important visitors to the school.

"Lending a helping hand" The strict production schedule of tower pieces required team work.

5. Meeting Nights

On every other Wednesday night, we held our HKN actives' meetings. These meetings include our "standard" business, such as officer reports, committee reports, old business, and new business. Despite the large amount of business conducted at our meetings, they were usually very informal, with several humorous skits and practical jokes on "deserving" active members. In addition to keeping track of our nearly 200 active members, the unwritten requirements for the office of Recording Secretary include a good sense of humor and a quick wit. The Recording Secretary usually manages to liven up the meetings by presenting the minutes in a unique and unpredictable way. If the membership is not amused, they definitely let it be known! The following is a brief summary of some key events at each of the actives' meetings.



"THE KING LIVES!!!" The membership of Beta was treated to a visit from Elvis, who just happened to have a Centennial Tower piece.

Date	Key Topics Discussed
8/24/88	Banquet date set, Re-write HKN actives attendance software, HKN receives VT102s, CentComm. needs people, TowerComm schedules weekend work session.
9/7/88	Pee Wee Herman minutes, pledge letters sent, formal lounge duty training added to pledge process, Unix manuals in for lounge, chewy granola vote, bagel price up 5 cents to cover delivery, picnic scheduled, sign up to sell shirts!, 58 tower pieces complete, TGIF.
9/21/88	IEEE mags. returned to IEEE for HKN databooks, AT&T donates equipment, lounge mag tapes given away, HKN member working on Centennial video, TowerComm needs sandblasters, Soup Kitchen day set, 266 resumes in this years book, deadline for paddles set, 58 people attend callout, Unix manual rack installed, big fridge needs new compressor, Horticulture apples sold in lounge, pledges attend TGIFs as part of pledge process, 87/88 annual report is away, Hamburger Happy Hour.
10/5/88	Bylaws voting begins, bagel bin built, HKN gets football block, new bristles for vacuum, 74 pledges total, Pledge/Active game, first tower piece sold!!, apple cider sold in lounge, 1st Hamburger Happy Hour is a BIG success, TG has world record 108 people, Awards Comm redoing applications.
10/19/88	lounge/workshop cleaning day Sunday, banquet tickets on sale, lounge suplier trouble, plant trip to ATT sponsored by SWE, thinking about upgrade for laser printer, $550 dollars donated to soup kitchen, TGIF.
11/2/88	BYLAWS PASSED, new lounge shelves under construction, $100 allocated to purchasing HKN camera, paddle orders are in, McDonald Douglas plant trip, Homework Comm. gets new folders.
11/16/88	"Hollywood Squares" minutes, Nikon AF 35mm camera purchased, $1,293 appropriated for purchase of Bunn-O-Matic high volume coffee maker, LabComm is officially formed, banquet a success cost $1400 and 131 attend.
12/7/88	candy canes are given out, paddles will arrive last week of classes, Bunn-O-Matic has arrived, certificates have arrived, 50 food baskets delivered to needy families, Officer elections, post-election celebration.

Date	Key Topics Discussed
1/11/89	Welcome back, Bunn-A-Matic coffee maker care and feeding instructions, lounge duty & committee sign-ups, PESC E-Week volleyball & basketball team sign-ups, Mello-Yello no longer available, TGIF.
1/25/89	"Remote Control" minutes, banquet announced (The Trails), pledge letters are away, the "Bunn" has a new heating element and works, cola wars vote to replace Mello-Yellow begins, scholarships are available, lab-comm first meeting is called, Centennial video shown.
2/8/89	We have 48 pledges, EE needs phone-a-thon help, tape deck is repaired, RC Cola pitted against Squirt in cola wars, McDonnell Douglas plant trip, Beta's in "The Bridge", lab petitions are available.
2/22/89	"California Raisins" minutes, paddle deadline set, RC vs. Squirt: The War Continues..., Beta wins Outstanding Chapter Award, newsletter database is complete, B-Ball & V-Ball teams both go down 1-1.
3/15/89	Gong Show at banquet, Shop-Vac, Squirt Wins: The Final Chapter, Picnic scheduled to be held at Fort Q, HKN wins Vicki Michelson Award, BBL w/Prof. Maciejewski, photo-copier is on it "last leg", CE amendment is voted down, extra copies of "The Bridge" distributed.
3/29/89	Hughes Scholarship winners announced, Mandi taken hostage, "LeTong" donut togs banned, "Bunn-O-Matic" coffee stand made complete with drains, electronics parts still available, Soup Kitchen day set, banquet ticket deadline, reactivations, TGIF.
4/12/89	"Cellular" minutes, welcome new actives, Delco scholarships, Banquet & Gong Show a success !, Gong Show video, Hamburger Happy Hour.
4/26/89	"Bangles" minutes, Food-Finders food bank, lab meeting with Prof. Schwartz, canoe trip, phone-a-thon results HKN's cut declined and given to school, a senseless fit of violence - the destruction of the LeTong, elections & post-election celebration.

6. The Lounge

The student lounge in the Electrical Engineering building is the largest continuing project of Beta chapter. Well over 1500 man-hours are required *each semester* to keep the lounge open. The hours of normal operation are 7:30 a.m. to 5:30 p.m. every weekday, however, it is quite rare to find the lounge closed at any hour of the evening (or morning) during the busy parts of the semester, around exam times or before major project due dates. The lounge is a unique place on campus where students are free to stop and relax and talk to the people around them. The lounge has a very "laid back" atmosphere and serves as a great place to study, talk with friends, grab a snack, or just relax.

A wide variety of products is available at reasonable prices to students and staff. The rule of thumb for lounge pricing is to break even, allowing 10-15% for theft, adding up to very reasonable prices. Beta proudly proclaims having the cheapest cokes in town.

Health conscious individuals can always find juice, coffee, tea, apples, raisins, granola and fresh bagels in the lounge. But the lounge also caters to the "junk food junky" in all of us with assorted chips, donuts, brownies, coffee, hot chocolate and a wide variety of pop.

The table below gives a feel for the volume of our sales on some of our popular lounge products.

Item	Amount Sold
Apples	1,000
Bagels	12,096
Brownies	4,608
Chips	22,452 bags
Coffee	49,000 cups
Hot Cocoa	3,400 cups
Donuts	53,376
Granola	8,448 bars
Peanuts	1,368 bags
Juice	11,664 cans
Raisins	1,512 boxes
Soft Drinks	87,336 bottles
Tea	3,800 cups
Laser Printer	70,904 pages
Photocopier	93,065 pages

A tape deck and healthy supply of tapes of all kinds of music, along with cable feed FM, assure the lounge is always filled with a variety of music. The actives on duty "make the call" as to the musical selections to be heard and the tastes can vary from heavy metal one minute to an hour of classical the next. In addition to the soothing background music, the lounge also contains a wide selection of company brochures and periodicals which provide a great source of information to graduating seniors looking for prospective employers. The lounge also houses a collection of graduate school catalogs for students researching various graduate programs across the country. Copies of the crossword puzzle available in the campus newspaper provide an excellent excursion while enjoying an early morning cup of coffee and donut.

One important service that we provide in the lounge is a Toshiba BD5610 copier for public use at 5 cents per page. This service has helped not only for conducting HKN business, but also for students who make use of the homework solutions provided by professors. Our Homework Committee currently maintains the homework solution notebooks for many classes and keeps them available for students to review or copy.

The lounge also houses many facilities which will become part of the new student lab including an assortment of electronic parts, component data books, calculators, computer terminals, and some basic test equipment including an oscilloscope, power supplies, a frequency counter, a digital multimeter, and a signal generator. A wide variety of tools, soldering irons, and accessories are also available.

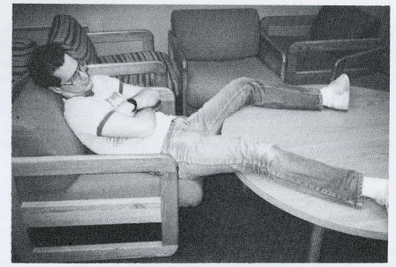
The lounge houses a large collection of component data books and company catalogs. In many cases HKN has a better supply than the engineering library. Through company donations, we also have a large selection of transistors, digital IC's, microprocessors, resistors, motors, power supplies, capacitors, LED's, and other hardware available for student use. With over 50,000 components in stock and our competitive prices (*ALL FREE OF CHARGE!*) we give Radio Shack a run for its money!

Due to the generosity of alumni and various companies, we also provide an HP41 calculator with a tape drive and printer, and a TI58C and associated printer for general student use. Along with the calculators themselves, HKN also maintains a library of calculator programs for the HP41 including Electrical Engineering Solutions and Advanced Mathematics. Students have also written their own programs and stored them on our cassettes to share with others.

Three general-purpose terminals are available in the lounge. These terminals are connected to the Engineering Computer Network (ECN) at Purdue and provide students with access to over 40 minicomputers and hundreds of Sun workstations on the campus wide network. For students who program best with a bottle of coke or a cup of coffee at their side and their favorite songs filing the air, the lounge is a great place to work.

The Apple LaserWriter which we purchased two years ago rarely sits idle at any hour of the day or night. At four cents a page the laser has seen much use both from students in EE and in other majors. The laser printer is a necessity for that finishing touch to any project or term paper not to mention when it comes time to find a job, the laser printer can produce typeset quality resumes and cover letters easily tailored to each students needs by the students themselves. The laser printer is also used for theses and the advanced graphics capabilities provided by the PostScript language. As the only place screen dumps from Sun Workstations can be printed the laser writer in the lounge is valued as a real plus to members of the ever growing workstation crowd.

To keep the lounge in tip-top shape each semester the actives and pledges spend about 50 man-hours during a single weekend cleaning the lounge top to bottom. This two day endevour includes arranging the books, brochures and pamphlets in the library, steam-cleaning the carpets, taking a thorough inventory of parts, and yes, we even do windows. Managing the resources of the lounge is easily the largest single project with which we are involved on an ongoing basis, when people in EE think of HKN they think of the lounge.



"Now Thats Relaxing!" An active gets comfortable in the Student Lounge.

7. Financial Summary

The office of treasurer for Beta chapter is one of the most challenging and time consuming positions. The treasurer maintains records of all lounge income, makes deposits, pays bills, and, handles the extensive "red tape" associated with a Purdue student finance. The following tables show our cash receipts and disbursements for the academic year and provide some insight into the exceptional effort required of the treasurer to maintain all the information.

Cash Receipts	Amount	Cash Disbursements	Amount
Laser Printer	3,213.20	Laser Printer	2,030.35
Scholarship	100.00	Scholarship	165.05
Photocopier	2,592.60	Photocopier	1,181.19
Donations	405.00	Community Service	1,390.50
Banquet Tickets	115.00	Banquet	3,555.41
Miscellaneous	325.11	Miscellaneous	1,724.97
Centennial, keychains	21.00	Centennial	4,381.47
Centennial, shirts	6,124.00		
Centennial, mugs	1,114.00		
Initiation Fees	4,600.00	National Fees	2,320.00
Social	325.00	Social	3,304.38
Resumebook	3,540.00	Resume Book	250.32
Magnetic Tape	590.00	Magnetic Tapes	296.00
Interest	985.15	Audit Fee	1399.86
		Pop	21,045.62
		Chips	7,532.45
		Donuts	11,939.31
		Juice	6,562.93
		Coffee, Tea	3,487.81
		Napkins	42.71
		Health Food	1,409.96
		Bagels	3,018.50
Lounge Food Sales	63,904.25	Total Lounge Food Expense	55,039.29
		Lounge Maintenance	2,046.44
		Workshop	446.74
		Paddles	780.58
		Postage	773.85
		Phone	191.04
		Office Supplies	1,077.90
		Pledge Projects	310.62
		Acts of Kindness	571.00
		Sales Tax	3,862.38
		Meetings	1,924.64
		Film and Processing	306.07
		Printing	844.24
Total	89,060.49	**Total**	88,774.43

Keeping track of this large of a volume of money is quite a task! Considering the Centennial income separately the summary shows that our expenses once again outweighed our income. The enormous amount of effort by Beta associated with the EE Centennial contributed to expenses in many areas not reflected in the Centennial disbursements which accounted for the cost of the items sold. In addition, the Centennial required substantial use of the lounge and workshop facilities which had to be maintained. The acquisition of the new Bunn-O-Matic high volume coffee maker for the lounge (The ''Turbo Coffee Maker'' as it is affectionately known by the Beta membership) also contributed.

8. Industrial Relations

One of the many important functions of our chapter is establishing and maintaining a strong working relationship with industry. This relationship has resulted in an ongoing series of technical presentations, seminars, and plant trips sponsored by Beta chapter and many companies throughout the nation. Corporate representatives are invited to present seminars on technical subjects of interest to Purdue's undergraduate and graduate student body. These presentations provide an excellent way for students to relate their coursework to real world problems and applications, while at the same time allowing companies to make themselves known to the students. Since these presentations coincide with dinner, companies typically supply free pizza to the attendees and Beta chapter donates the soft drinks. The following list covers our technical presentations during the 1988-1989 school year.

Date	Speaker	Topic
9/7/88	EDS	''Project Charlie''
9/21/88	Control Data	''Super Computers - Production and Applications''
10/5/88	Delco Electronics	''The Car of the Future''
10/19/88	AT&T Bell Labs	''Using Perceptual Criteria in the Compression of Audio and Visual Signals''
11/2/88	ALCOA	''Use of Array Processors in Real-Time Control''
11/16/88	McDonnell Douglas	Canceled due to weather
1/25/89	Delco Electronics	''Computer Technology in the Automobile''
2/8/89	GE Medical Systems	''Principles of Magnetic Resonance Imaging''
2/22/89	Ameritech	''Future Cellular Development & Technical Advancement''
3/15/89	AT&T Bell Labs	''Guided Wave Photonic Switching''
3/29/89	Hughes	''Mac: All Beef Patty on a Sesame Seed Bun?''
4/12/89	McDonnell Douglas	''AV8-B Harrier Jump Jet''

Students of the School of Electrical Engineering also had the opportunity to see a ''live presentation'' during a trip to the McDonnell Douglas plant in St. Louis. During the day-long trip, approximately 40 students were able to tour McDonnell Douglas flight simulators, electronics facilities, and even an aircraft assembly plant. In the past, Beta chapter has been able to arrange similar plant trips to AT&T, Delco Electronics, General Electric, and the GM Tech Center. The trips are beneficial, not only for the students who get a chance to find out more about ''real world'' engineering, but also for the companies, since they are able to build their corporate reputation among the students.

9. Service

The goal of all of Beta chapter's activities is to make the school a better place to work and the community a better place to live. Once again, Beta put on the HKN Thanksgiving Day Food Drive. Through the support we received, including the monetary donations of the faculty and staff and the hard work of the membership, we were able to feed over 50 needy families in the Lafayette area. This project required a large number of members to carry out many different tasks to make this effort a success.

The event was publicized and donations of well over $1,000, along with several boxes of canned foods, were collected. The night before delivery, groups of actives invaded local grocery stores to pick up orders placed for wide a variety of products for the baskets. Next came the sorting and boxing. Five hours later the lounge was full of boxes ready to ship out, each containing a complete Thanksgiving Dinner. The next morning these boxes were delivered by teams of members to the doors of needy families on a list provided by the Salvation Army.

''Ready to Roll'' a cart full of food baskets ready to be delivered to needy families

Along with the Food Drive, our chapter also continued a favorite tradition by sponsoring the HKN Soup Kitchen Day. During one day of each semester, our chapter donated that day's lounge proceeds to St. Anne's Soup Kitchen. This year, we were glad to increase our donation to over $1,300 to help feed the hungry of Lafayette. In addition, throughout the week of the Soup Kitchen Day, we collected canned goods and dried foods to donate to St. Anne's. This effort has expanded over previous years, as the amount of donated goods and money collected continues to grow.

The Food Finders Food Bank was established to help feed the hungry in the community by collecting large quantities of food either through donations or by purchasing at rock bottom prices and then offering it for extremely reasonable prices to needy families. The trips to the Food Bank are favorites of the membership and are always well attended. What better excuse is there for a group of adults to make themselves a complete mess than for a good cause?

Another project this year was the collection of aluminum cans to help fund research for the disease neuro-fibromatosis. Collection boxes place around the building are regularly rounded up and delivered to the organizers of the program. In addition, a group of actives got together each semester to donate blood during the campus wide blood drive.

HKN has a number of activities aimed at helping the student body of Electrical Engineering. Beta publishes the ''Student Survival Guide,'' packed full of useful

information about surviving in the School of EE at Purdue. The book is sold for the extremely reasonable cost of 50 cents. In addition, to make the transition from another school a smooth one, Beta helped give seminars for new graduate students. We held seminars which introduced Purdue's computing facilities to the new students and HKN volunteers guided the students through examples of mailing, editing, and programming on the Engineering Computer Network.

EE Phone-A-Thon is a very important project for the school, often raising a substantial portion of the school's budget. HKN filled the sessions with actives to contact alumni of the school for donations. Once again, this year HKN turned down the universities gracious offer of 10% of the proceeds which we collected. This year HKN declined proceeds in excess of $4,400!

Another service that occurs during the fall semester is ''High School Days,'' during which perspective Purdue students visit the campus. HKN is regularly called upon to lend a hand in giving tours of the campus, the EE building and its classrooms, labs, computer facilities and of course, the highlight of any tour, the HKN lounge. High School Days are a very worthwhile endeavor which allows high school students to discover more about electrical engineering and Purdue first hand from actual students. Several actives still remember the day they first saw the campus and talked with the HKN actives of that day.

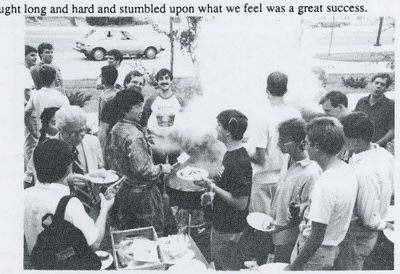
The task laid out for the the infamous Tower Committee, or ''Tower Commission'' as it was commonly known, was truly a formidable one. It was to transform from scrap metal into attractive souvenirs one of the greatest landmarks of the Purdue campus of old, the EE antennas. The committee supervised the delivery of the pieces, designed the final product, surveyed the interest, set a price for the pieces and gathered background material on the legendary towers themselves. Included with the tower pieces which were sold, were photos of the old towers and a one page history of the towers, all done by the members of the committee. None of the other work, however, compared to the actual physical labor required to machine the pieces to their final form. Each piece required tens of man hours and were truly of a high quality. Today the pieces are given as gifts to visiting ''VIP''s to the school.

Our chapter also helped the school through several other very useful projects. The ''Meet Professor...'' board is maintained by HKN and helps acquaint students with members of the Purdue faculty. Faculty members are interviewed and photographed by members of the chapter and the photos and interview summaries are posted. In order to help the student body get to know the new faculty of EE, Beta also maintains a ''Meet the NEW Professor board''. In addition, Beta maintains the faculty photo board near the main office of Electrical Engineering. This board shows the office number and area of research of every faculty member along with a picture taken by Beta chapter.

Along the same lines of faculty/student interaction, Beta has a committee dedicated to furthering communication between the faculty and student body. The TAPTL/BBL Committee organizes Take-A-Prof-To-Lunch informal get-togethers and Brown-Bag-Lunch research presentations. Each of these allow students and faculty to interact outside the classroom atmosphere. Additionally, Beta maintains the composites of every graduating class of EE. It is hard for an alumni to return to campus without stopping by the board to see one more time how funny their hair looked ''back then''. Beta also, maintains a display case highlighting current research within the school. HKN is always ready to take on short or long term projects, often at a moments notice, to help out the school.

10. Social Activities

Beta chapter spends a great deal of time and energy on its community service and day-to-day business, however, we do try to remember how to have fun. In a quest to find a social function which would have the most involvement by the most new people, HKN thought long and hard and stumbled upon what we feel was a great success.



''Get 'em while they're hot'' Hamburger Happy Hour on the lawn on front of EE

We thought... ''If only we could do something early on a Friday afternoon, everyone would be in a such a good mood...and with a little luck the weather would be beautiful...'' We thought, ''We would have to plan it for after classes, yet before anyone would have any plans for the evening, and we need something which will really draw people!'' Hamburger Happy Hour was born! We gathered grills, extra food from the

picnic, cokes from the lounge, and bought ice and all the fixin's. We got out the frisbees, footballs and a portable stereo. The plan was simple, to give away free food and drinks to everyone who came by; and, to assure people came by, we set up on the *front lawn of EE* (where else?). The Hamburger Happy Hour was a big success, with the food and fun lasting until sundown.

''Typical HKN Active?'' An active goes all out, slide rule in hand, for the Geek TG

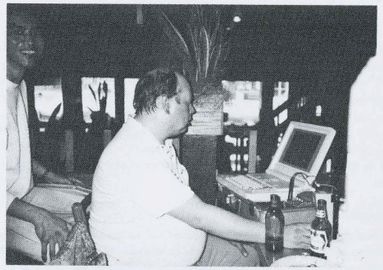
In addition to H^3 the chapter sponsored many different social events throughout the year. All of Beta's social events are always open to all students, faculty, friends and family. Clearly, the most popular events that we sponsor are our TGIF parties (Thank God Its Friday). Some events had far greater success than we anticipated. One TGIF last year packed a local pizza place with well over 100 EE students, faculty and staff! Every two or three weeks during the semester Beta sponsored TGIFs featuring all you can eat pizza at a local eating establishment for a nominal price, usually 3 or 4 dollars per person. Each TGIF had a unique, sometimes quite crazy, theme, requiring actives to

dress up in a variety of costumes. Highlights of last year's TG's included the Geek TG, the Heavy Metal TG, and the ever popular Island TG. The TGIF's provide an excellent opportunity for students and faculty to get to know one another. In fact, one of the school's professors even volunteered the use of his home for one of our TG's.

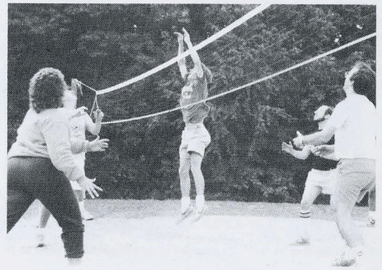
Each semester Beta chapter sponsors a picnic featuring almost every traditional picnic food and activity. Beta provides the food and drinks free of charge. The picnic offers another excellent opportunity for students and faculty to interact, more often than not pitted against each other in softball or volleyball, or the traditional water balloon fight. For the boating enthusiasts Beta sponsored a canoe trip which was attended by approximately twenty actives the week after finals.

Beta chapter also sponsored several athletic teams, competing in sports such as softball, volleyball and basketball. The records weren't all that impressive but the fun had by everyone involved was. In addition, in order to encourage interaction the actives regularly challenge the current semester's pledge class to a friendly game of football. The actives keep the score and, consequently, rarely loose, but the atmosphere surrounding the game always assures a great time is had by all. The pledge/active game provides an excellent chance for the pledges to get to know the active membership and become involved. Of course, the big night for the pledges is the initiation banquet held near the end of each semester.

Beta's social activities are a big part of what makes us ''tick.'' The activities allow members to interact on a ''person to person'' basis. Every activity HKN is involved with takes on a special dimension when we are able to carry them out with people we consider good friends. Beta's social activities, and the friendships they foster, are the ''glue'' that holds us together and makes everything else possible. Because it is easy to forget to stop and have some fun with a busy college schedule, HKN strives to make sure that everyone has an opportunity to ''take a break'' and relax with their friends.



"No E-Mail??" It wouldn't be an HKN function without logging in with the laptop and a cellular phone.



"I got it!" Faculty and students enjoy a little game of volleyball at the picnic

HKN pledges staff the "Old Time" Lab for the EE Centennial

11. Looking Ahead

We are extremely proud to have been a part of something this special this past year and we do hope the things we have achieved will make a difference in the future. We hope the things we have done will continue to benefit others as much as they have benefited us.

As we look back we can't help but contemplate the future. We are confident that the tradition of excellence of Beta chapter will carry on. The new Student lab will undoubtably play a big part in the future of the chapter. As the opening day for the lab approaches, we see how much work and commitment it will require. The final proposal laid out ambitious, but attainable, goals for the development of the lab. It will be up to the members of Beta to make sure we reach those goals. The lab will house equipment of equal or better quality than what is available in the current course oriented facilities. The procurement and maintenance of this equipment will be be quite a project in itself, not to mention the task of providing and monitoring access.

In addition, we know the Lounge will be changing in the future. The Lounge is ever progressing and expanding in the services it provides. As the needs of the school change the lounge will follow suit. It is also clear that the community service aspect of Beta chapter will be advancing in the future. Encouraged by the success of the Thanksgiving Day Food Drive, the trips to Food Finders and the HKN Soup Kitchen Day, the ambition and goals of the Community Service Committee can only expand. It will truly be an exciting time as new projects begin and "take flight".

Looking ahead, we are confident that advancement will continue. The membership of Beta chapter has proven time and time again that the extent of its "current" involvement is never enough, there must always be expansion to a larger scale and into totally new areas. It is extremely rewarding to see new people become active in HKN and to have the opportunity we did to be a part of something special. It is even more rewarding, however, to know they will be the future of Beta chapter, always lending the hand, giving of themselves and their time to make great things happen.

12. Appendix A

Student Laboratory Proposal

submitted to
Dr. Richard J. Schwartz
Head of the School of Electrical Engineering

by
Eta Kappa Nu Lab Committee
James E. Lumpp, Jr., Chairman

April 26, 1989

HKN

Student Laboratory Proposal

Abstract

Currently in Electrical Engineering there are no laboratory facilities available for student use, except for those used in formal lab courses. Our goal is to make a well equipped lab readily available to all students, especially undergraduates. This proposed lab would be used for work on both course-related and non-course-related projects. The lab would provide an opportunity for students to gain more hands-on experience with electronic devices and, as a result, foster a greater interest in electrical engineering.

Aware of this need, Eta Kappa Nu has been considering the expansion of its current laboratory facilities for several years. HKN already has a collection of test equipment in place which is available to all students, as well as a means to maintain and provide access to this equipment. The proposed lab would be made available through the same system currently used for the student lounge. This proposal includes detailed plans for an HKN-maintained student lab, the means of controlling access, providing security and safety, acquiring and maintaining equipment, as well as a proposed floor plan for the lab. It is our intention to have the lab available to students at the beginning of the Fall semester of 1989. It is the goal of this proposal to make sufficient arguments in support of a student lab, demonstrating the need, the feasibility, and the ability of HKN to support and coordinate this effort.

Introduction

For years Eta Kappa Nu has dedicated a portion of one lab bench and several cabinets in the EE Student Lounge for an assortment of equipment and electrical parts. This equipment has been available to all students working on either course-related projects or hobbyist projects, and available parts are offered free of charge to anyone who needs them. Unfortunately, the lack of space and small supply of equipment have always been limiting factors in the popularity and use of the equipment. The ideal situation would be to expand the current facilities to three or four lab benches. Each bench, or certain areas of each bench, would be dedicated to certain functions (i.e., a soldering station, a microcomputer station with a download box, etc.).

A survey of the EE student body has indicated that there is substantial support for an expanded student laboratory. Furthermore, this survey was utilized to help determine what tasks would be most commonly performed in such a lab and therefore the kinds and quantities of equipment that should be made available.

HKN views this student lab as a much needed facility for the school of EE and the student body, and one which HKN is in an excellent position to provide. HKN is already involved in several activities which support the school, the students, and the faculty. We have an active membership from which to draw support and involvement and a strong leadership which has repeatedly demonstrated dedication to serving the school. We feel the lab will fit in well with the services HKN already provides and that HKN is in an excellent position to support this lab. The laser printer and copier have been very popular and their widespread use has motivated HKN to implement policies to provide access to the lounge as many hours of the day as possible. These same policies will allow HKN to provide the student body with access to the lab for the same number of hours per day.

Administration Plans

Maintaining the lab will be the responsibility of a standing Laboratory Committee within HKN. This group will be responsible for maintaining the lab (ordering plotter paper, supplies, etc.) and arranging for any required maintenance. The lab will have its own account number with student finance, and it will be from this account that all supplies and repairs will be funded. This fund will be started with a gift from HKN of the money collected from the EE Centennial sales profits and maintained by donations. We intend to work through the instrument room for routine repairs and service of the equipment.

The safety policies for the lab will be the same as those in use in undergraduate EE labs where appropriate. In addition, we will consult with authorities within the university concerning additional appropriate safety measures. We will also request that periodic reviews of our safety procedures and facilities be made. Safety measures will include, but not be limited to, the following:

- First Aid Kit stored in the lab
- Fire extinguisher stored in the lab
- Posting of CPR instructions

- Telephone with posted emergency numbers in the lab
- Eye protection goggles available in the lab
- Ground fault circuit interrupters

HKN views the safety and security of donated equipment as paramount, yet access to the lab will be the deciding factor in the popularity and use of the lab. Therefore, access to the lab will be provided any time the lounge is open. This schedule of open hours includes normal operating hours and any night or weekend hours when an HKN active member is present. All of the equipment will be physically secured to the lab benches by either chains or cables. Software security will most likely be a sensitive issue. We will provide protection for "key discs" or other devices and still maintain easy access. The existing door from room EE26 to the hallway will be kept locked, with primary access to the lab being through the lounge, as discussed below. A security buzzer will also be installed on the hallway door to alert the actives on duty of any use of that exit.

Since it is intended that the bulk of the equipment in the lab will come through corporate donations, our policy for contacting possible sources of equipment or money will be very important. We intend that all official contacts with companies and other donors will be made through the School of Electrical Engineering. HKN and the lab committee will only establish informal contacts with possible sources of lab equipment/supplies, but all requests will be directed to one designated Laboratory Committee member who will coordinate these activities with the school.

Room Layout Description

The primary criterion for the lab's physical location is that access to it be efficiently monitored and controlled. The equipment in the lab will have to be protected from both theft and abuse. If the well being of the equipment cannot be assured, HKN would prefer not to be responsible for the administration of the lab. Therefore, the only feasible solution we see is to locate the lab in an adjoining room to the current student lounge.

The proposed layout we have prepared includes room EE26 serving as the lab with rooms EE24 and EE22 remaining the student lounge and workshop areas, respectively. Room 26 would then house the lab benches, storage shelves for data books, and lockers for student projects. In addition, the lab will house the copier and laser printer. In order for the lab to be monitored by HKN, we propose the addition of a door between rooms 24

and 26. Figure 1 shows our proposed layout for this room.

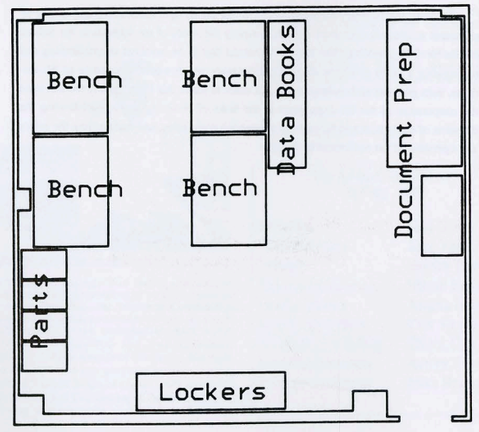


Figure 1

Against the south wall will be the copier, the laser printer, and a table for cutting and pasting documents. This plan will unify our printing services and make maintenance much easier for the responsible parties. Against the east wall will be (at a perpendicular to the wall) a cabinet to store data books and related materials. This area would be visually sub-divided from the lab. Against the back side of the cabinet will be two workbenches. On each of these benches will be a workstation with equipment as explained in

the next section of this proposal. We will have an additional two benches against the north wall of the room with a second pair of workstations and lab equipment. Also on the north side will be a storage cabinet with electronic parts. Finally, to be sure that students have a place to store projects and to keep the lab organized, we will place a bank of lockers against the west wall of the room.

We feel that this layout provides the prospective users with adequate space to work and allows HKN to effectively monitor activity within the lab.

Equipment

The lab equipment was selected to enable lab users to repair both digital and analog equipment, design medium-sized electronic projects, and provide facilities to build these projects. The equipment will be distributed on four lab benches, each intended to support specific types of work. In addition, the equipment for each lab bench has been specifically selected to reduce the total amount of equipment in the lab and to avoid excessive duplication of equipment.

Figure 2 gives an equipment list showing items that we wish to include in the lab. Many of the items listed in Figure 2, such as bookcases and parts cabinets, are rather mundane, but necessary for a lab. These items will not be discussed in detail here.

Bench 1 will be oriented towards the construction of projects. It will have the equipment generally required to build a project and to do simple tests, such as visual inspection and continuity checking. It is not intended to be a fully-instrumented test bench. It will have tools to enable a student to make wire-wrap or soldered prototypes.

There will be two benches (benches 2 and 4) for the development of digital systems such as embedded controllers or small microcomputers. Both benches will have a microcomputer with assemblers, emulators, and software to drive EPROM/PAL programmers. A student will be able to write software on the microcomputer, program an EPROM, and then use the logic analyzer or dumb terminal to verify that the project is working correctly. To aid in the development of a controller that employs a single-chip microprocessor, a single-chip computer development system has been included on bench 4. This bench contains an extremely useful piece of hardware, since it greatly simplifies the debugging of an embedded microcontroller.

Also desired for all of the microcomputers in the lab are connections to the Engineering Computer Network (ECN). This capability would allow people to download

Bench 1	Bench 2
Repair & Construction Station(s) Drill press, tools, board vices, vices, solder/de-solder station, wire-wrap tools, inspection lamp, component and supply cabinets, function generator, RLC tester, multimeter, power supplies, analog oscilloscope, IC tester, Variac, counter	Design Workstation(s) 386 PC with software pack 1, plotter/printer, PAL & PROM burners, EPROM eraser, MINC EPLD design system software, dumb terminal, logic analyzer, DMM, analog or digital oscilloscope, power supplies (+5, +12, –12)

Bench 3	Bench 4
Basic Test Station(s) 386 PC with software pack 1, analog oscilloscope, digital multimeter, function generator, filter box, RLC tester, power supplies, TV/FM sweeper, colorbar generator, isolation transformer, counter, digitizing oscilloscope & printer, IEEE488 card, IEEE488 network analyzer, IEEE488 spectrum analyzer, IEEE488 programmable function generator	Design Workstation(s) 386 PC with software pack 1, plotter/printer, single-chip computer development system, dumb terminal, logic analyzer, DMM, analog or digital oscilloscope, power supplies (+5, +12, –12, +/–15), RS-232 analyzer

Figure 2

files from their accounts on ECN to the EPROM programmer, and would increase the utility of the microcomputers.

The design of printed circuit boards will be performed on microcomputers in the lab using programs such as Hiwire or Smartwork. Printed circuit artwork will be printed on a plotter or printer. The actual fabrication of circuit boards will be done elsewhere, since chemicals for circuit board production are corrosive and will not be permitted in the lab.

The fully-instrumented bench, bench 3, will be a general-purpose analog testing bench which will include several types of test equipment. The long-term goal for this bench is to integrate the test equipment on an IEEE488 bus in order to do semi-automatic testing and data logging under the control of a microcomputer.

Summary

In short, the facilities currently available for the design, fabrication, and testing of electronic projects is not robust enough to satisfy the needs of the students in the School of Electrical Engineering. Eta Kappa Nu would like to be involved in establishing and maintaining a fairly extensive electronic laboratory which would be open to all EE students, both graduate and undergraduate. In order to make this lab a reality, we will need the cooperation of the EE department in the tasks of obtaining space, coordinating the donation of equipment and funds from sponsoring companies, and maintaining the safety and operation of the equipment in the lab.

Equipment List

Software Pack 1
- Wintek Hiwire+
- Smartwork
- Assemblers
- Compilers
- Simulation package

Furniture

QTY	ITEM
4	Benches
8	Stools
2	Chairs
4	Full-height bookshelves
1	Filing cabinet
1	Table
?	Storage cabinets for student projects

Component cabinets

QTY	ITEM
3	Capacitors
6	Resistors
3	Transistors & Op Amps
4	TTL Parts
2	PROMS, PAL/EPLD, microprocessors
?	Chassis hardware
?	Speakers, microphones, etc.
?	Transformers

Construction tools

QTY	ITEM	MODEL
1	PC drill press and drill set	
1	Hacksaw and blades	
1	Hand drill and drill set	
2	Board vice	
1	Bench vice	
1	Portable vice	Dremel
1	Solder/De-solder station	
2	Set of manual wire-wrap tools	
1	Wire-wrap gun and bit set	Gardiner-Denver
1	Inspection lamp with magnifier	

Test equipment

QTY	ITEM
1	Isolation transformer, 120-120, 60 Hz, 10 Amp
1	Variac, 0-140 V, 10 A
2	Analog multimeter
2	Digital multimeter
1	Function generator, DC - 5 MHz
1	Analog oscilloscope
1	IC-Tester
1	RLC tester, commercial grade
2	Power supplies (±0–20 V, 100mA; 5 V, 300mA)
1	Power supply (variable, high current)
1	Power supply (5 V, high current)

13. Appendix B

Eta Kappa Nu
Beta Chapter Alumni Newsletter

Spring Issue **May 1989**

Editor's Notes

Greetings! This is the premier issue of a newsletter published by Eta Kappa Nu's Beta chapter for Purdue HKN alumni. This newsletter will keep you abreast of events of interest to Purdue electrical engineering alumni. The nice guys of the Beta chapter will publish this newsletter once a semester. The newsletter is a service of HKN and is free to alumni.

This first issue of the newsletter is only being distributed to a partial mailing list. I have written a UNIX application program to manage the mailing list database. Some of this semester's pledges entered the current address data for the mailing list by looking up addresses in the 1989 Purdue Schools of Engineering Alumni Directory published by Harris Publishing. Because of time constraints not all the names and addresses were entered, the remaining addresses will be entered into the database in time for the next edition of the newsletter (to be published in the fall). Please let us know if an error appears on the address label or if, for some reason, you do not wish to receive the newsletter. You may contact us by using the address below:

Alumni Committee
Eta Kappa Nu
Electrical Engineering Building
Purdue University
West Lafayette, IN 47907

E-Mail (ARPA): hkn@ec.ecn.purdue.edu
(UUCP): pur-ee!hkn

We are also in need of a catchy title for this newsletter. If you have any ideas for an appropriate title, please let us know by writing a note to the address above.

That's all for the editor's notes in the first issue of the Beta Newsletter. We hope that you will enjoy keeping up with the happenings in the HKN Beta Chapter at Old Purdue by reading the newsletter.

Greg Cox, Alumni Committee Chairman

President's Corner

Welcome to the first bi-annual edition of Beta chapter's newsletter. Through this forum, we hope to keep the HKN alumni up to date on what is happening with Beta chapter, as well as the School of Electrical Engineering here at Purdue.

It has certainly been a successful year for HKN at Purdue. This year, Beta Chapter won Eta Kappa Nu's 1988 Outstanding Chapter Activities Award for the eighth consecutive year. The Nice Guys were also honored with Purdue Engineering Student Council's Vicki Michelson Award, presented annually to the "Best Engineering Society" on campus.

Of course, both of these were the result of a lot of hard work by many of the chapter's actives. We have continued many of our regular services, such as the student lounge, resume book, student laser printer, and homework solutions. As always, we tried to keep ourselves busy with a few "special" projects.

In the fall semester, the chapter held it's second annual Thanksgiving Food Drive. Through the generosity of the students, staff, and faculty of EE, we were able to deliver complete Thanksgiving food baskets (including whole turkeys !) to 50 needy Lafayette families.

Another ambitious project from the fall involved the School of Electrical Engineering's centennial celebration. Throughout the semester, HKN sold hundreds of Centennial souvenirs, including shirts, coffee mugs, and keychains, all bearing the EE Centennial logo. The chapter was also responsible for running an "Old Time Lab" demo, which featured some of the earliest electronic instrumentation used in the school.

As the academic year comes to an end, HKN is preparing to start a whole new service. Preliminary work is currently being done which will hopefully pave the way for the creation of a student computer &

Continued on Next Page

electronics lab. We hope to have such a facility available sometime during the next academic year.

Read on for more details about these and other HKN activities. I hope you enjoy this opportunity to stay "in tune" with HKN's Beta Chapter.

Ken Green, President, Beta Chapter

The Spring Banquet

Greeting HKNers! As you all know, we try to go to a different place every semester for variety, and this year "The Trails" was chosen for the initiation banquet.

One of the highlights of the banquet was the establishment of the "Ronald G. Harber" award for outstanding chapter service. Some of you may know Ron; he will be FINALLY graduating in August. Over the past few years Ron has made more of a contribution and had more of a positive influence on HKN than anyone else. We felt that the establishment of this award in his honor was the least we could do. The "Harber" award will not be given regularly; it will only be presented to "worthy" winners, which may take a few semesters to find.

In an unending quest for exciting after-banquet entertainment, this semester we tried our own HKN Gong Show. It was a great success and I think we will keep it in the future.

To conclude, I encourage all of you keep in touch with HKN. We have been the best chapter for the last 8 years in the country and we are truly the NICE GUYS!

Kirk Yang, Vice President, Beta Chapter

How's The Lounge? Recent Annual Lounge Sales:

Item	Amount Sold
Apples	2,146
Bagels	4,200
Bananas	960 lbs
Brownies	5,184
Chips	25,548 bags
Coffee	47,220 cups
Donuts	64,248
Juice	13,872 cans
Oranges	260 lbs
Rasins	2,250 boxes
Soft Drinks	95,856 bottles
Laser Printer	108,818 pages
Photocopier	102,437 pages

The First Annual HKN Gong Show!

1.	Professor Meyer	"Samurai Chip Splitter" (2nd place)
2.	Bruce Ferguson	"Flash Ferguson"
3.	John DiCamillo	"Professors From Hell"
4.	Curt Shrote	"Let's Survive the EIT"
5.	Professor Dietz	"Sit-Down Comic"
6.	Surprise Pledge Entry	"Surprise!"
7.	Brian Mann	"The Comedian from Hell"
8.	Professor Nyenhuis	"On the Engineering Applications of Rodents"
9.	Greg Pavlik Mike Phillip Dan Watson	"Power Tool with an Umlaut" (The Winner)
10.	Angela Hoyt Ken Green Corinne Wuerthner Sandra Tretter Mike Branson Chock Gan	"The Pack" (3rd place)

Host with the Most:
Mike "Chuck Berris" Humes

Judges:
Prof. Thomas "Maybe from Hell" Casavant
James "The Gong Breaker" Lumpp, Jr.
Richard "Another Old Member" Kulawiec

Speakers for Spring 1989 Meetings

Date	Company	Topic	Speaker
1/25/89	Delco Electronics	"Computer Technology in the Automobile"	Eric Norppa
2/8/89	GE Medical Systems	"Principles of Magnetic Resonance Imaging"	Mark Riehl
2/22/89	Ameritech Mobile Communications	"Future Cellular Developments & Technical Advancements"	Neil Cox
3/15/89	AT&T Bell Labs	"Guided Wave Photonic Switching"	Dr. Ron Nordin
3/29/89	Hughes Aircraft Company	"Mac: All Beef Patty on a Sesame Bun?"	George Pavlina
4/12/89	McDonnell Douglas	"AV8-B Harrier Jump Jet"	Dennis McLean

Bruce Ferguson at the Grand Opening of the new Material Science and Electrical Engineering Building

One Hundred Years of Electrical Engineering at Purdue

In grand style, the Electrical Engineering Department at Purdue celebrated its 100th birthday in 1988. True to form, Eta Kappa Nu was involved in the celebration from the beginning. The illustrious centennial committee and its partner, the tower committee, participated in the planning and execution

of most of the activities of the celebration, culminating in the "Centennial Days Celebration" on October 13-15, 1988.

The committee's task began with finding a new logo for the department. Rules were made, prize money collected, and hundreds of fliers were posted around campus by the committee members. When the dust settled, a design submitted by John Maccamack, a Purdue Staff member, was selected as the new Electrical Engineering logo.

With the new logo finally selected, the next exercise for the committee was to make money. We decided to imprint the logo on a profusion of profit-making products: sweatshirts, T-shirts, coffee mugs, tankards, and keychains. Sales were swift, and with the aggressive sales techniques mastered only by HKNers and Fortune 500 CEOs, over $4100 profit was secured. The profit was designated as a seed for the new student laboratory project which HKN is proposing.

In October, the celebration itself became the focus of our attention. Plans for tours and student laboratory demos dominated the committee's attention, as well as providing pledge projects for the fall pledge class. As a part of the departmental committee, we assisted in the planning of the activities of the celebration weekend, planned for the making of even more money through memorabilia sales, and watched our grades slip away as the big weekend grew near.

The celebration was a total success. Attendees included alumni from the class of 1927 as well as undergraduates. All enjoyed the many distinguished speakers and activities such as the centennial ball. A great time was had by all. When the celebration was formally finished, HKN had again showed the potential of its members to perform above and beyond the call of duty.

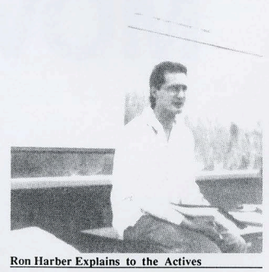
Bruce Ferguson, Centennial Committee Chairman

Revisions to the Beta Chapter Bylaws

Twelve years have passed since the last revision of the Beta chapter bylaws. Back in 1976, Beta chapter president Ron Fisher signed these bylaws into effect. Since then, many things have changed in Beta chapter which have caused the bylaws to become out-dated, including the number of offices in the chapter and some of the duties of the officers. Also, certain items in the existing bylaws, deemed ambiguous or vague, needed to be resolved. A committee, headed by Ron Harber and Bruce Ferguson, was formed to make recommended changes and present these to the officers, faculty advisors, and membership for their approval. This work began in January of 1988 and the bulk of the changes were made in the first month of editing and seemed agreeable to the chapter.

The wording of ARTICLE IV, Section 7a, generated the largest amount of debate. This item specified the requirements for invitation to membership. It was

Continued on Next Page



Ron Harber Explains to the Actives

contested on the grounds that the requirements for graduate students recommended by the committee were not in line with the National Constitution condition that graduate students "possess substantially the same scholastic and other qualifications required for undergraduate membership." After months of discussing this topic, it was decided that any graduate student having completed 9 credit hours of course work towards a degree in Electrical Engineering at Purdue University and having a grade point average at least as high as that required for entrance into the doctoral program would be eligible for membership. On November 2, 1988 the bylaws were officially approved by Beta chapter with the signature of president Jim Lumpp. The new bylaws must also be approved by the Dean of Students and the National Council in order to be official.

Ron Harber and Bruce Ferguson,
All-around Nice Guys

Eta Kappa Nu Officers
Spring 1989

President	Ken Green
Vice-President	Kirk Yang
Tresurer	Sandra Tretter
Recording Secretary	Mandi Barret
Pledge Trainer	Angela Hoyt
Lounge Chairman	Curt Shrote
Workshop Chairman	Chock Gan
Funstuff Chairman	Aditya Khorana
Industry Chairman	Mike Branson

Alumni Committee
Eta Kappa Nu
Electrical Engineering Building
Purdue University
W. Lafayette, IN 47907

(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 $36. Send a check with name and address to:

HKN BRIDGE
P.O. Box 2107
Rolla, MO 65401

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 65401