IN MEMORIAM

BURNS NEWMAN GAFFORD

Burns Newman Gafford was born on December 9, 1900, in Rogers, Texas. Newman, as he was called, was the eldest of four children (two boys and two girls) born to B. F. Gafford and Lizzie Payne Gafford. Newman's father was a railroad man and moved frequently, living at times in Texas and in Oklahoma. When Newman was in grade school his family moved to Whitewright, Texas, where he finished both grade school and high school, graduating from high school in May, 1919. A few months before Newman graduated from high school his father died. After his father's death, Newman's mother decided to move with her four children to Austin where they would have an opportunity to attend The University of Texas and get an education. All four children, Newman, Frank, Lurline and Ruth, graduated from The University of Texas.

Newman entered The University of Texas in 1919 receiving his BSEE in 1923. He joined the faculty of The University of Texas in 1923 as an instructor. He continued his education as a faculty member at Texas and earned his MSEE in 1928, at which time he was made an Adjunct Professor of Electrical Engineering. Newman subsequently rose to the rank of Assistant Profesor in 1936, Associate Professor in 1939, Professor in 1944 and was named Chairman of the Department of Electrical Engineering in 1945.

On December 24, 1928, Newman married Floy Logan of Port Arthur, Texas. This marriage was later terminated. Newman married Thelma Louise Barker (nee Hartley) in San Marcos, Texas, on August 23, 1942. Thelma survived Newman and lives in Austin today.

Newman, as Chairman of the Department of Electrical Engineering, served The University of Texas from 1945 until 1964, a period of profound growth and change. The Electrical Engineering Department, along with the entire College of Engineering, became both a strong teaching and a productive research organization. During his 19 year span of time the graduate instruction programs of the Engineering College grew at the highest rate of any college in North America, ending among the top 5 in Ph.D. degree production in state universities and among the top 10 of all universities. The Electrical Engineering Department played a leading role, as testified by the outstanding teaching and research faculty recruited under Prof. Gafford's tenure. During that period the Electrical Engineering Department moved into two new buildings on the Forty Acres. It was conducting much of its research activity at the off-campus Balcones Research Center, as well as in numerous laboratories and research centers on campus. The graduates from the department have distinguished them-

selves in many ways rising to positions of leadership in the utility, chemical, petroleum, electronics, aerospace, manufacturing and other industries in this country and abroad. A large fraction of the advanced degree holders have made leading contributions in the academic world and in research.

Newman was an early contributor to advancing the state-of-the-art of his own field of protective relay design for power systems. He received an award from Westinghouse Electric Corp. for patent disclosure on relay design in 1940. Later, patent No 3,172,012 was granted on a "Proctective Relay for Polyphase Machines Responsive Solely to Positive and Negative Sequence Currents." Newman was the founder of the Power Distribution Conference in 1948, a conference now held annually in the College of Engineering, The University of Texas at Austin. This conference brings together distribution engineers from the greater southwest area of America to discuss common problems and their solutions. Newman served as general chairman of the conference until his retirement in 1964.

As a teacher, Newman is remembered for his concise statement of relevant problems and direct solution for those problems. He was always available for consultation with students. The student members of Eta Kappa Nu, the honorary EE society, remember Newman as a superb host. Through the decades from 1945 to 1965 many Eta Kappa Nu honor students enjoyed the hospitality of Professor and Mrs. Gafford at their Lake Austin home where each semester's picnic and initiation was held.

Newman was the author or co-author of several technical papers. One paper, "Thermal Synthesis Relay is Best Replica of Motor Heating," won First Prize at the American Institute of Electrical Engineers, South Texas Section Paper Contest, in 1958. A second paper, "Heating of Induction Motors in Unbalanced Voltages," co-authored with W. C. Duesterhoeft and C. C. Mosher, III, won Second Prize in the Southwest district of the American Institute of Electrical Engineers in 1959.

Early in his career Newman served as consultant to the City of Austi in development of the power utility. He also worked with consulting firm serving the LCRA. Following is a list of his principal consulting activit

City of Austin - Underground Distribution Systems, Transmission Line Design and Relay Engineering

LCRA - Substation Design, Transmission Line Design and System Analysi

City of Robstown - System Design

Electrical Service Co. - Evaluation of New Transformer Design

National Security Agency - Engineering Recruitment Problems

Westinghouse Electric Corp. - Relay Development

Houston Lighting and Power Co. - Power Factor Studies and Substation Design

Texas Power and Light Co. - Circuit Breaker Tests

Texas Hydro-Electric Co. - Efficiency Tests of Hydro-Electric Plants

Texas Power Corporation - Efficiency Tests of Hydro-Electric Plants

City of Halletsville - Acceptance Evaluation of Municipal Plant

U. S. Air Force - Technical Expert on Test Content

Esco Mfg. Co. - Product Research and Development

Cameron Iron Works - Technical Expert on Electrical Furnace Operation

Newman was a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), as well as of the parent organization, the American Institute of Electrical Enginees (AIEE). In addition, Newman was cited in Who's Who in America, Who's Who in Engineering, Who's Who in American Education and in American Men of Science.

Following is a list of some of Newman's technical papers.

"Electric Power Systems in Texas," Chapt. 19, Texas Looks Ahead, Vol 1, 1944.

"Training Program for Young Engineers," Transactions of Power Distribution Conference, University of Texas, Austin, TX, 1949.

"Power Distribution Conference," Journal of Architecture, Engineering, and Industry, University of Texas, Austin, TX, 1950.

Electric Power Transmission, Book, Co-Author with Edith Clarke, 1951.

"Introduction to Relaying," Transactions of Conference for Protective Relay Engineers, Vol 5, 1952. Texas A & M University.

"Planning Your Electric Utility Distribution System," Transactions of Management Conference of the Central Texas Municipal Utilities Institute, Vol 1, 1953.

"Polyphase Directional Relay Torques," with C. A. Baldwin, Power Apparatus and Systems (AIEE Transactions), Vol 7, pp 753-759, 1953.

"Analysis of Polyphase Directional Relay Torques," with C. A. Baldwin, Electrical Engineering, p 625, July 1953.

"An Ozone Water Treatment Plant for Rural Use," South Texas Section, AIEE, May 17, 1955. Second Prize paper.

"Direct Burial Transformers for Residential Distribution," with Robert A. Bell, Transactions of Power Distribution Conference, The University of Texas, Austin, TX, 1956.

"A New Protective Relay for Three Phase Motors," Transaction of Conference for Protective Relay Engineers, April 1958, Texas A & M University.

"Effects of Unbalanced Voltages on Three Phase Motors," (with W. C. Duesterhoeft, Jr. and C. C. Mosher III) Transactions, Eleventh Annual Power Distribution Conference, Oct 1958.

"Heating of Induction Motors on Unbalanced Voltages," with W. C. Duesterhoeft, Jr. and C. C. Mosher, III, AIEE Transactions, Power and Apparatus Systems, June 1959, pp 282-288.

This Memorial Resolution was prepared by a Special Committee consisting of Dr. Alfred H. LaGrone (chairman), Dr. William H. Hartwig, and Dr. William C. Duesterhoeft, Jr.

Distributed to members of the General Faculty on October 6, 1976