

MICROWAVE DIELECTRIC TESTING SERVICES

Dr. Alexander B. Bereskin

Cincinnati, OH 45220-2411

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In searching through my old files I found four papers that may be of interest to you. These four papers are:

- 1) A high Efficiency High Quality Audio Frequency Power Amplifier
- 2) A 3,000 Watt Audio Power Amplifier
- 3) Build It Yourself - A 50 Watt High Quality Audio Power Amplifier
- 4) A Dual Channel Transistor Power Amplifier

The "Build It Yourself" paper has a number of photographs of transformer windings showing the actual steps required in their construction. These photographs are available in 8"x10" glossy photographs with considerably better resolution than that in the Xerox reproductions. If it becomes necessary to use these I will supply the photographs on condition that they be treated carefully and returned promptly in good condition. They are the only ones that I have of this series.

The last paper is actually the second transistor power amplifier that I built. The first one was featured as the first high power transistor audio power amplifier in a book whose author I no longer remember. I have used the dual channel amplifier in my living room to the present time. The only problem with this amplifier is that the incandescent bulbs used as pilot lights have burned out and had to be replaced at regular intervals. If I were to build one of these again today I would probably use a silicon transistor instead of the germanium transistors that were available at that time. That would probably be a good project to undertake but I no longer have the interest that I used to have. This amplifier is used with the "Transistorized Stereo Preamplifier and Tone Control for Magnetic Cartridges" paper listed in my "Publications". With the system turned on, and the stylus lifted from the disc, there is no audible hum or noise in a quiet room.

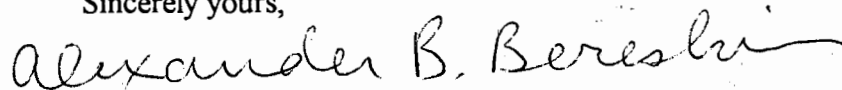
I am also including a "Biographical; Data", prepared some years ago, listing my publications and patents for whatever use you may wish to make of them

I do not have much interest in comparisons made between tube and transistor power amplifiers. In my experience, by the time you introduce 25 dB of feedback in the

driver-output loop, the signal does not much care whether you are using transistors or vacuum tubes. If you introduce operation at 30% overload you are not considering an "amplifier" but a "distorter". It makes more sense to get a higher power amplifier and operate it within its design limits. Note that my 3,000 watt amplifier does pretty well with only 13 dB of feedback . I notice that one of the references you list is for a 250 watt Bereskin amplifier built by some one else. I have not seen this paper but would be interested in receiving a copy if you happen to have one.

As far as I am concerned all of this material, being more than forty years old, is in the public domain. I have no objection to your using it as long as you give proper credit to its source.

Sincerely yours,

A handwritten signature in cursive script that reads "Alexander B. Bereskin". The signature is written in black ink and is positioned above the typed name.

Alexander B. Bereskin
Professor Emeritus of
Electrical Engineering

Alexander B. Bereskin

(Biographical Data - 7/20/93)

Born

November 15, 1912 - San Francisco. California

Family

Married - Louise E. Seufferle, April 25, 1936

Children - Alexandra L. Bolton

Charles G. Bereskin

Victor L. Bereskin

Carmen R. VanMeter (adopted)

Foreign Residences -

1917-21 Vladivostok, Siberia, USSR

1921-1930 Mexico City, Mexico

Education

High School Diploma - 1929 - American School, Mexico City, Mexico

Electrical Engineer - 1935 - University of Cincinnati

MSc in Engineering - 1941 - University of Cincinnati

Employment Record

1929-30 Mexican Telephone & Telegraph Company, Mexico City, Mexico

1930-35 Various Co-op jobs

1935-36 Champion Paper and Fibre Co., Hamilton, Ohio

1936-38 Commonwealth Mfg. Co., Cincinnati, Ohio

1938-39 Cincinnati Gas & Electric Co., Cincinnati, Ohio

1939-41 University of Cincinnati, (Teaching Fellow)

1941-43 University of Cincinnati, (Instructor)

1943-44 University of Cincinnati, (Assistant Professor)

1944-45 Western Electric Co., (Radar Engineer)

1945-47 University of Cincinnati, (Assistant Professor)

1947-52 University of Cincinnati, (Associate Professor)

1952-83 University of Cincinnati, (Professor)

1983-87 University of Cincinnati, Microwave classes taught without salary

1983-91 University of Cincinnati, (Professor Emeritus)

Honors, Prizes, and Awards

1958 Fellow IRE (IEEE)

1959 IRE PGA Achievement Award

1962 Official visitation of South American IRE and AIEE Sections with technical lectures in Spanish

1976 Distinguished Engineer of the Year awarded by the Cincinnati Technical and Scientific Societies Council

1981 ASEE DELOS Award

1983 ASEE Western Electric Fund Award

1983 Cincinnati Chapter ETA KAPPA NU Award of Merit

1983 Professor Emeritus - University of Cincinnati

1984 IEEE Centennial Medal of Honor Award

1985 University of Cincinnati Distinguished Alumnus Award

1990 ELECTROMAGNETICS ACADEMY MEMBERSHIP (by invitation)

1991 Doctor of Science (Honorary) - University of Cincinnati

Courses Taught Outside UC

1983 Cincinnati Electronics, Evendale (40 - 1.5 hr sessions on Microwave Theory and Techniques)

1968 UNAM, Mexico City, Mexico, (8 weeks on Transistor Circuits with lectures in Spanish)

1964-65 RCA, Norwood (26 - 2 hr sessions on Transistor Fundamentals)

1964 Avco, Evendale (4 - 2 hr sessions on Random Electrical Noise)

1962-63 Avco, Evendale (32 - 2 hr sessions on Transistor Theory and Operation)

1961 G.E. Co., Evendale (32 - 2 hr sessions on Transistor Technology)

1959 Avco-Crosley Sonar Course (25 - 2 hr sessions on Advanced Electronics)

1944-45 Western Electric Co., Whippany, N.J. (Mark XIII Radar Instruction)

Scientific and Professional Society Membership

Sigma Xi, Member
Tau Beta Pi, Member
Eta Kappa Nu, Member
Institute of Electrical and Electronics Engineers, Fellow-Life
American Society for Engineering Education, Life
Engineering Society of Cincinnati, Life
Retired Engineers and Scientists of Cincinnati, Chairman 1992-93

Institute of Electrical and Electronics Engineers (IRE-IEEE)

National Activities

1967-69 Fellow Committee
1964-67 Membership and Transfers Committee
1964-65 Sections Committee
1961-62 Director IRE Region 4
1959-60 National Chairman IRE Professional Group on Audio
1956-59 Administrative Committee IRE Professional Group on Audio
1955-58 Editor IRE Transactions on Audio
1955-66 Editorial Committee IRE Transactions on Audio
1965-67 IEEE Membership and Transfers Committee
1964-68 IEEE International Hospitality Committee
1964-65 IEEE Review Committee
1959-60 IRE Professional Groups Committee
1955-56 Chairman and organizer of Region 4 Subcommittee of IRE Education Committee
1952-53 IRE Sections Committee

Local Activities

1948-49 Treasurer Cincinnati Section IRE
1949-50 Vice-Chairman Cincinnati Section IRE
1959-51 Chairman Cincinnati Section IRE
1963-64 First Chairman of merged Cincinnati IEEE Section
1966 Organizer and Chairman of Tutorial Session on Microelectronics for the Cincinnati Section IEEE Spring Technical Conference

Professional Registration

Ohio

Consulting

1992-Present Microwave Dielectric Testing Services (Home Business)
1983 Metal Improvement Co.
1983 Clopay Corporation
1982 Wood Herron and Evans (Patent Attorneys)
1982 Lindhorst and Dreidame (Attorneys)
1981 Metal Improvement Co.
1976-78 Lindhorst and Dreidame (Attorneys)
1975-77 Wood Herron and Evans (Patent Attorneys)
1974-79 General Motors Corporation
1951-69 D. H. Baldwin Corporation
1963-64 Emery Industries, Inc.
1961-62 U.S. Corps of Engineers
1958-67 U.S. Food and Drug Administration
1958 Saratoga Industries
1949-50 Liebel Flarsheim Company
1946 Kett Tool Company
1942-43 Kohl-Stilwell Engineering Company

Patents

2,206,466 Electronic Timer Circuit
2,924,780 Audio Amplifier System
2,932,800 A High Power Audio Amplifier Employing Transistors
2,963,933 Transistor Circuit
3,001,120 Power Supplies

3,061,804 Audio Transformer
 3,200,335 Transistor Hybrid Parameter and Noise Figure Meter
 3,322,874 Pipe Organ Simulation Circuits (With D. W. Martin)
 3,323,060 Transistor Test Set Having Currents Related to $10^{n/2}$
 3,476,865 Variable Time Delay Multivibrator
 3,479,440 Randomly-Perturbed, Locked Wave Generator(With D.W.Martin)
 4,159,499 Ground Fault Detection and Protection Circuit
 4,172,483 Percussion Head Tool
 4,329,663 Back Plate Mounted Lumped Element Gunn Oscillator
 5,083,088 Microwave Test Fixtures for Determining the Dielectric Properties of a Material
 5,187,443 Microwave Test Fixtures for Determining the Dielectric Properties of a Material

Publications

"Power Factor Meter", Electronics, October 1941, pp. 38-42
 "Improved High Frequency Compensation for Wide Band Amplifiers", Proceedings of the IRE, October 1941, pp. 608-611
 "Voltage Regulated Power Supplies" Proceedings of the IRE, February 1943, pp. 47-52
 "Cathode Compensated Video Amplification", Electronics, June and July 1949
 "A High Efficiency-High Quality Audio Frequency Power Amplifier", IRE Transactions on Audio, March-April 1954, pp. 49-60 and 1954 IRE Convention Record, Part 6 Audio and Ultrasonics, pp. 15-37
 "Fifty Watt Amplifier for High Quality Audio", Electronics, October 1954, pp.160-164
 "A 3000 Watt Audio Power Amplifier", IRE Transactions on Audio, March-April 1956
 "Build it Yourself - A 50 Watt High-Quality Audio Power Amplifier" (Invited Paper) IRE Student Quarterly, September 1956, pp. 15-37
 "A Transistorized Decade Amplifier for Low Level Audio Frequency Applications", IRE Transactions on Audio, September-October 1957, pp. 138-142; also Proceedings of the NEC October 1957
 "A High-Power High-Quality Transistor Audio Power Amplifier", (First documented record of such an amplifier), 1957 IRE National Convention Record, Part 7, pp. 149-161
 "A Transistorized Stereo Preamplifier and Tone Control for Magnetic Cartridges", IRE Transactions on Audio, January-February 1960, pp.17-20
 "A Low Noise Microphone Preamplifier", IRE Transactions on Audio, May-June 1961, pp. 86-88
 "A Dual Channel Transistor Power Amplifier" (Invited Paper), IRE Student Quarterly, September 1961, pp. 46-53
 "A Dual Channel Transistor Power Amplifier", IRE Transactions on Audio, November-December 1961, pp. 197-203
 "Back Plate Mounted X-Band Lumped Element Gunn Oscillator", IEEE Transactions on Microwave Theory and Techniques, Vol. MTT-30, No.5, May 1982, pp. 835-837
 "Multi-Screw Tuner for Any Mismatch", Microwave Journal, August 1983, pp. 133-141
 "Loss Separation in Coaxial Cables", presented at Progress in Electromagnetic Research Symposium, in Boston, July 1991.
 "Microwave Dielectric Property Measurements", Microwave Journal, July 1992, pp. 98-112. (This paper was presented at the Microwave Hybrid Circuits Conference on November 13, 1990).

Special Contributions to the University of Cincinnati

Initiated and taught lecture and laboratory courses in Advanced Electronics, Transients, Communications, Transistors, Integrated Circuits, and Microwaves.

Conceived and designed the Microelectronics Laboratory in Swift Hall. Procured financing and equipment for this laboratory.

Conceived and designed the Microelectronics Laboratory in Rhodes Hall. Procured financing and equipment for this Laboratory.

Taught Microwave lecture and laboratory courses for four years after retirement, without pay, and designed and built numerous pieces of equipment for use in the laboratory. Raised \$257,000 during this time for the purchase of modern microwave test equipment.