D. LAWRENCE JAFFE

D. Lawrence Jaffe was born July 6, 1913 in Brooklyn, N.Y. and educated in the public schools of that city. In 1930, he enrolled in the School of Technology of the College of the City of New York. He was graduated with the degree of B.S. in E.E., Cum Laude, in 1935. During his senior year at City College, he designed a series of polyphase frequency converters, which were built under contract by Electric Specialties of Stamford, Connecticut.

In September 1935, he was appointed a laboratory instructor in the Department of Electrical Engineering at the City College. While teaching, he took graduate courses in communications engineering at Columbia University, receiving the M.S. in E.E. degree in October 1936. In June 1937 he completed the formal courses required for the Ph.D. in Electrical Engineering. During these years he contributed papers on rotating machinery and transmission lines to a professional publication.[1, 2]

In June 1937 he was awarded the Samuel Willard Bridgham Fellowship in Electrical Engineering. At this time, he left the City College Engineering Staff to devote full time to research in frequency modulation problems under the direction of the late Professor Edwin H. Armstrong. In 1938, his Fellowship was renewed and in 1939 his doctoral dissertation in frequency modulation systems was completed. He was awarded the degree of Doctor of Philosophy in Electrical Engineering in June 1940. This was the second degree of its kind ever awarded by Columbia University. Publications reflecting his work in frequency modulation appeared some time later.[3, 4, 5]

In 1939 he became a staff engineer with the Television Engineering Department of the Columbia Broadcasting System under the direction of Dr. Peter C. Goldmark. During the period 1939-40 his assignments included the development of studio monitoring and switching equipment. One of his early assignments was to convert the Grand Central Studio and Chrysler Building facilities from the 475 line to the present 525 line standard. The modification involved the redesign of all video amplifying, deflection, and synchronizing equipment used at the time.

When CBS committed itself to the development of a color system, his work included the development of phonic motors for synchronizing the receiver color disc and installation of the 120 cycle synchronized power source used by the CBS color system.[6]

In 1940 when CBS began scheduled black and white broadcasts, he was in charge of maintenance of video facilities including the Chrysler tower terminal equipment. At the time these included three operating iconoscope camera chains, one iconoscope and one image dissector film chain.

In 1942, at the request of the magazine ELECTRONICS he contributed an article on television circuit design to a special supplement "UHF Technique".[7]

In 1942 he joined the engineering staff of the Raytheon Manufacturing Corporation, Waltham, Massachusetts. He studied radar techniques in a course then being given at the Massachusetts Institute of Technology. At the conclusion of this course, he remained at the M.I.T. Radiation Laboratory as Raytheon liaison engineer with the radar systems engineering group under Dr. N.E. Edlefsen. During the period 1942 to 1944, his work consisted of research and development on antennas, sealed antenna feeds, rotary joints, TR-ATR plumbing for X-band systems, spark gap modulators and X-band echo boxes. During 1943, the work of Lodge & Howard with wax lenses at 100 CM described in Nature, May 23, 1889 was checked at 3 CM with polystyrene plano-hyperbolic lenses. During 1943, he made the following patent disclosures: regenerative magnetron pulsing circuit; waveguide switch; waveguide antenna feed with combination E & H plane bends; microwave oscilloscope; process for manufacturing of non-metallic microwave waveguides and components by metal coating; synchronous eddy current brake; voltage regulated power supply with grid-controlled hard tube rectifiers; pressurized antenna feed (U.S. Patent #2,605,420); microwave lens system; automatic electronic antenna pattern-tracer; and remote positioning device utilizing a standard radar set.[8]

In 1944 he joined the engineering staff of the Templetone Radio Manufacturing Corporation, New London, Connecticut, as Chief Research Engineer. Here he supervised all government development projects. In 1945, he conceived and designed one of the early telemetering systems for Wright Field.

At the close of World War II, he left the Templetone Radio Corporation to found with P. H. Odessey the Polarad Electronics Company, which later became the Polarad Electronics Corporation. Under his direction and, in many cases, his direct supervision, the existing line of microwave equipment was developed. He has been responsible for the development of Polarad's many government equipments in the field of countermeasures, microwave signal generators and spectrum analyzers.

Recently under his direction a program has been initiated to develop digital computing devices for industry and the military with direct application to data processing and navigational aids. In addition, a Microwave Tube Department has been started to broaden the scope of the company's activities in the microwave field.

He is a senior member of the IRE, a member of the American Ordnance Society, the Radio Club of America and the Young Presidents Organization. He is also active in the American Management Association.

1 "On Skew Factors in AC Machinery," Journal, AIEE, March 1939, page 133.
2 "Solution for Complex Propagation Constants," Journal AIEE, November 1936, page 1287.
3 "Armstrong's Modulator," Proc. IRE, Vol. 26, No. 4, April 1938, page 475.
4 "A Theoretical and Experimental Investigation of Tuned-Circuit Distortion in Frequency Modulation Systems," Proc. IRE, Vol. 33, No. 5, May 1945, page 318.
5 "Modulation Circuit Theory," Journal of Franklin Institute, Vol. 299, No. 6, June 1940, page 779.
6 "Power Frequency Changes for Color Television," Radio, Vol. 30, February 1946, page 15.
7 "Wide Band Amplifiers & Frequency Multiplication", Electronics, April 1942.
8 "Remote Position Control By Direct Frequency Variation", Report 482, Radiation Laboratory, M.I.T., November 23, 1943.