

. . . ELECTRICAL ENGINEERING

It is surprising to find that a field of endeavor as highly advanced today as electrical engineering is sixty-eight years old; yet that many years ago, this department had its beginning at Michigan.

The Department of Electrical Engineering traces its beginning back to 1889 and the east basement room of the Physics Laboratory. Here a small laboratory was established, as part of the Physics Department, for a course in dynamo-electric machinery. Equipment consisted of a twenty-five-horsepower steam engine for driving a line shaft, a five kilowatt Edison dynamo, a constant potential motor of five horsepower, a ten arc Brush dynamo with arc lamps, and a Brackett cradle dynamometer. A photometric room was located next to the laboratory and another room contained a thirty-one cell storage battery.

More courses in electricity were offered by the Physics Department in the early 1890's. In 1893 the first course of a professional rather than a theoretical nature was introduced. It was a course in electrical machinery design taught by Professor Henry Smith Carhart (Wesleyan '69, Sc.D. hon. Northwestern '12), who had taught the first electricity classes in the Physics Laboratory basement.

The Department of Electrical Engineering was instituted in 1895-96 as the electrical engineering courses were separated from the Physics Department. The curriculum was expanded with the addition of Electrical Measurements and Primary Batteries. By 1897-98, the staff was enlarged to four members.

Facilities for the Department of Electrical Engineering were improved in 1904 when the south half of the West Engineering Building was completed. The Department moved into the south part of the West Engineering basement.

The period of 1905-15 witnessed the steady growth of the Electrical Engineering Department. With George Washington Patterson (Yale '84, Massachusetts Institute of Technology '87, Ph.D. Munich '99) as head of the department, the staff was doubled, enrollment was increased, and new equipment was procured. The number of courses offered



Measurement of the power Output and gain of a Wideband Traveling Wave Amplifier.

grew from sixteen to thirty-two. Requirements of courses in communication were partly responsible for the increase in classes. When the north end of the West Engineering Building was finished in 1909, the offices of the department and dynamo laboratories were moved there. The illumination laboratories were moved to the attic while the communications laboratories were left in the basement.

Carl Page, an active contributor to the *Technic* with such articles as "Heat Barrier", "The New Aero-train", and "Reflections of a Freshman" was active in high school also. Carl Graduated from Flint Mandeville High School, where he participated in Student Council and Debates, and was Class President. Carl is a freshman in Science Engineering and in the future he plans to do research work.

John Castlereagh Parker ('01, A.M. '02, E.E. '04, D. Eng. hon. '40) became chairman of the department when Professor Patterson was appointed chairman of the Department of Engineering Mechanics. Parker made several changes in the curriculum and in the general philosophy of the department. In the early days of electrical engineering, it was possible to give the student a general picture of the whole field, plus details of practice. However, theory had been developed extensively and many complicated applications had resulted. It was no longer possible to cover the whole field of electrical engineering in four years. There had to be a choice between increased specialization and more general and theoretical courses. The idea that students should specialize after graduation was supported by both staff members and industry. Therefore, the descriptive courses were dropped, reducing from thirty-two to twenty-three courses in 1919. This period was also marked by a general stiffening of requirements.