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History of the Mechanical Engineering Dept.

By PROF. F. W. MARQUIS

THE "Ohio Agricultural and Mechanical College" was first opened for students on September 17, 1873. Although the name was changed to "The Ohio State University" in 1878, the original name is an indication of the importance of training in mechanical engineering in the minds of the founders of our University. This same idea is substantiated by the fact that a "Department of Mechanic Arts" was included in the proposed university organization in the report of a committee of the Board of Trustees which was adopted in 1871.

From the above it is seen that the history of the Department of Mechanical Engineering virtually began with the history of the University, although this department was not actually formally established until 1881. Professor Stillman W. Robinson was made head of the department upon its establishment. He had come to the University in 1878 as Professor of Physics and Mechanics. Instruction in mechanical engineering was started before the establishment of the department. A very modest mechanical engineering laboratory was located in the basement of the west end of University Hall, which was the first University building erected, and here the real beginning in specialized work in mechanical engineering was made. It is even true that the first degree in mechanical engineering was granted before the department was formally created. This was given to John H. McCormick, now deceased, who graduated in June, 1880, with the degree of M.E.

In 1879, one year after Professor Robinson came to the University and two years before the establishment of a separate Department of Mechanical Engineering, an appropriation was made for a Mechanical Engineering Laboratory. It is said that the laboratory erected by this appropriation was the second of its kind in the United States and that it proved to be a most valuable addition to the equipment of the University. The building was located just north of University Hall and is still standing. It is now being used as headquarters for the Service Department. It was first occupied in 1880 and made possible much expansion in the facilities of the department.

There were no graduates in 1881 and 1882, but in 1883 two more M.E. degrees were granted, one to Charles F. Marvin and the other to Joseph N. Bradford. Mr. Marvin has been for many years Chief of the United States Weather Bureau, and his many achievements are a matter of record. Mr. Bradford is well known to most

of the present faculty and many students. He was the first head of the Department of Drawing and later of the Department of Architecture of The Ohio State University, and served for many years as University Archi-

tect. He is largely responsible for much of the campus development, such as the design of buildings, their location, arrangement, etc. He has only recently retired as University Architect and is still serving as a Professor in the Department of Architecture.

In 1884, there was one graduate, in 1885 three, and from then on with the exception of one or two years the degrees were granted in gradually increasing numbers. Some of the early graduates, such as B. G. Lamme, 1888 (now deceased), R. S. Feicht, R. D. Mershon, and C. E. Skinner, all of 1890, became noted engineers and have been important factors in connection with the development of the engineer-

ing profession. Graduates are now found in important positions throughout the state and nation. However, it is not possible, in as short an article as this one must be, to recount the achievements of graduates, and so nothing more will be said about that phase of the history of the department.

The practice of awarding the M.E. degree for four years' academic work was continued until 1915, when the policy was started of awarding the degree of B.M.E. instead. Since then the professional degree of M.E. has been awarded only to graduates who have had not less than four years of acceptable engineering experience and have written an approved thesis.

Professor Robinson served as head of the department until 1895. The University was very fortunate in having as able a man as he in that position during the early years of the department, which grew steadily and rapidly under his guidance. Our present Mechanical Engineering Laboratory was named after him, and there are many reminders of him around the department. The Robinson boiler was a gift from him, and the Robinson Fellowship was endowed by him. Many of the mechanism models with which the students in mechanical engineering are familiar were made by his students. The Board of Trustees in resolutions adopted concerning him, said:

Professor Robinson was a man of inventive genius, original power as an investigator and teacher, and was recognized by

(Continued on Page 19)



FRANKLIN W. MARQUIS

MECH. ENGINEERING DEPARTMENT

(Continued from Page 7)

the learned scientific societies throughout the country. In addition to his mechanical inventions he was the author of many important contributions to scientific education, and won for himself a national reputation in the field of mechanical engineering. His generous gifts to the University were evidence of his continued interest and enthusiasm for the cause of education. Modest and unpretentious, he endeared himself alike to students and faculty. His scholarship and teaching power made him one of the most valuable and distinguished

(Continued on Page 20)

MECH. ENGINEERING DEPARTMENT

(Continued from Page 19)

men in the history of the University. The trustees call attention to his career with appreciation and gratitude.

It is apparent that Professor Robinson felt that what is normally termed "shop work" should be regarded as manual training rather than as mechanical engineering, and that such work might well be administered by a department separate from the Department of Mechanical Engineering. It seems probable that this feeling of his had something to do with the fact that a Department of Industrial Arts was created in 1893. This department was given charge of the shop work required in the mechanical engineering curriculum, which answers the question sometimes asked as to why, at The Ohio State University, the administration of shop work is not a responsibility of the Mechanical Engineering Department, as is the case in so many colleges.

Dean E. A. Hitchcock, now at the helm of our College of Engineering, first came to the University in 1893 as an Assistant in Mechanical Engineering. In 1895 he served for one year as acting head of the department. He remained until 1913 when he resigned to accept an industrial position. At the time of his resignation his rank was Professor of Experimental Engineering. He returned in 1920 to accept his present position as Dean of the College of Engineering. Professor Horace Judd, now Professor of Hydraulic Engineering, started his service for the University in 1895 as a Fellow and Laboratory Assistant in the Department of Mechanical Engineering and has been here ever since with the exception of the three years, 1899-1902. The fine influence of both these men, now known to so many of the present students, has been felt in the department for many years.

In 1896, one year after Professor Robinson resigned as head of the department, Professor Wm. T. Magruder was elected as his successor. The development of the department, so ably started by Professor Robinson, was continued just as ably under the direction of Professor Magruder. At the time he assumed charge, much of the classroom work of the department was carried on in Hayes Hall, while the laboratory work was continued in the original Mechanical Engineering Laboratory building. These quarters were entirely inadequate, and largely as a result of his efforts Robinson Laboratory was built in 1907. From the first it has housed the Departments of Electrical and Mechanical Engineering. Robinson Laboratory was intended to serve, as its name implies, primarily as a laboratory, and the original plan contemplated another adjacent building to contain classrooms, offices, library, etc. This second building has, even yet, not been built, and such a building is still included in the campus development plans.

Robinson Laboratory, as originally built, occupied a ground area of some 35,000 sq. ft. It was the first college building in the United States to make use of the so-called saw-tooth roof construction, which, as all who have worked in it will testify, has proved to be very satisfactory. It provided space for some much-needed labor-

atory equipment, which was gradually added as the years passed.

After several years the space in Robinson Laboratory allotted to the Department of Mechanical Engineering proved to be inadequate, and in 1925 an addition was made to the west of the south end of the building. This addition increased the floor space available for the use of the department by some 75 per cent and has made possible the proper housing of new laboratory equipment and has greatly bettered other facilities, especially in machine design. Students who, in recent years, have worked in the present spacious, quiet and well-lighted drafting rooms will be surprised to learn that all machine-design drafting was for many years done on the balconies in the older part of the laboratory. It must have been very difficult for the students of earlier days to concentrate properly on their work and to make creditable drawings, since as a rule laboratory apparatus was being operated just below them, involving noise, distraction, and vibration while they worked. The present drafting rooms are certainly a wonderful improvement.

In 1929 Professor Magruder, after thirty-three years of faithful service, decided that he wished to be relieved of the administrative duties as chairman of the department, and resigned as such. He was, however, retained as a Professor, and his wise counsel and helpful assistance are still available. At his resignation the present chairman was appointed.

Since the early days of the department there have been many changes and much development in the field of mechanical engineering. At first major emphasis was placed on shop work, drafting, and machine design. A little later the relative importance of power, with special reference to steam power, became greater. Then the internal combustion engine, the automobile, and still more recently, aeronautical engineering have been emphasized. The development has been accompanied by a continual broadening of the field, not along technical lines only, but also along more general lines such as sales engineering, administrative work, and the big area having to do with the human element, sometimes called human engineering.

Throughout all this development changes in the curriculum of the department have constantly been made in order to keep abreast of the times. Such changes still continue but there is a distinct effort not to include highly specialized work in the four years required for the B.M.E. degree. This degree, it is firmly believed, should represent a broad and thorough foundation in mechanical engineering; and real specialization should come after this degree has been received, sometimes in connection with resident graduate work, but perhaps more frequently as a result of hard work and study done in the graduate school of experience.

"Father, did Edison make the first talking machine?"

"No, my son. God made the first talking machine, but Edison made the first one that could be shut off."

—Wautaugan.