

The Development of Radio Station KOAC in the  
Department of Physics

The first course in radio at Oregon Agricultural College was given in 1913-14 by the late Dr. Willibald Weniger, Professor and Head of the Physics Department at that time. The course, which was designated Wireless Telegraphy, 222, was introduced as the result of a request, by five students, for such a course. A spark-type transmitter was built and operated by the class on the Oregon State Campus. Previous to the introduction of a course in wireless telegraphy, Professor S. H. Graf of Oregon Agricultural College had transmitted and received wireless messages in \* Corvallis using a spark coil for transmitter and a coherer for receiver.

During the period of encampment on the campus during World War I instruction in wireless, on a practical basis, was given by Mr. Willis Duane Pessley of the Electrical Engineering Department. After the close of the war, until Dr. Weniger's return to the campus in 1920, there was no Institutional activity in wireless.

Upon Dr. Weniger's return there was again a demand, by a group of students including a number of ex-Navy operators, for instruction in wireless and for a wireless station. Accordingly the course was again given and well attended. In 1921-22 the work in wireless was assigned to Mr. Jacob Jordan, a new instructor in the Physics Department. Mr. Jordan had at that time great interest, and considerable experience, in amateur radio.

During the period 1920-22, a spark set transmitter was built and operated on a wavelength of 375 meters under the call 7YJ. An operating license was issued by the U. S. Department of Commerce. The wireless station was located in a Physics laboratory on the north wing of the second floor of Apperson Hall. Operation of the station started about October 8, 1921. During the floods of November 11 to November 22, 1921, the station handled communications for Pacific Telephone and Telegraph Company, the Western Union, Oregon Agricultural College, and for many Corvallis citizens.

Late in 1921 Mr. Jacob Jordan began experiments on the transmission of speech and music by radio telephone. On those days money was scarce and much of the necessary equipment was unavailable on the market, so Mr. Jordan built most of the equipment. A fifty-watt home-made transmitter resulted from his work and experiments.

\* Most of the information herein given was taken from "The Economic and Technical Aspects of Radio Station KOAC" a thesis written in 1937 by Professor Grant S. Feikert, now chief Engineer of Radio KOAC, KOAC-TV, and other stations of the System.



In 1922 a license was issued to the Oregon State Agricultural College to operate Mr. Jordan's 50-watt transmitter as a broadcast station under the call KFDJ. Custody of equipment, as well as responsibility for compliance with the license, was assigned to the Department of Physics.

The first formal broadcast from Oregon State Campus over KFDJ was made on January 23, 1923. This was a broadcast of the Corvallis High School Band. The first concert from an Oregon State Agricultural College group was on January 25 by the R.O.T.C. Cadet Band under the direction of Captain Harry L. Beard.

The 50-watt KFDJ transmitter was improved and used until 1925. Station KFDJ, under Mr. Jordan, with the cooperation of Dr. Weniger, continued to broadcast live musical programs during the school year 1923-24. Phonograph records were used to a limited extent. The programs also included many talks by staff members covering a wide variety of subjects. There was, however, no set schedule of broadcasts.

About 1921, the Oregon State Agricultural College Extension Service became interested in the possibility of radio broadcasting. At first this was done over station KGW in Portland. Later a committee was appointed to consider broadcasting over KFDJ. In March, 1923, a radio technical committee was appointed by Director Maris of the Extension Service. Members were George W. Kable, Extension Service; A. E. Jensen, Farm Mechanics Department; H. C. Seymour, Extension Service; F. O. McMillan, Electrical Engineering Department.

The committee recommended that the station apply for a Class B license for 1923, that the station have modulation quality equivalent to that of commercial broadcast stations, that necessary funds be provided with which to build a new station, that \$1600 per year be provided for operation, and that some qualified faculty member or student be employed to operate the station.

On February 26, 1925, another, rather large, committee was appointed, with Dr. W. Weniger as chairman, to consider the entire question of operation of a college radio station. The committee recommended, among other things, that the technical operation be under the Department of Physics. As a result of the favorable recommendation of the committee for development of a college station, the Executive Office, under President W. J. Kerr, ordered the construction of a 500-watt station. This unit was built, during the summer of 1925, by Professor Jacob Jordan in the Department of Physics. A license was obtained which assigned the station a frequency of 1060 kilocycles to be used until it could be tested by the Federal Inspector for a class B rating.

The transmitter was located in room 201 of Apperson Hall, at the south end of the second floor. The output power of 500 watts was developed by two type 212D Western Electric tubes. Modulation was in the oscillator unit and was supplied by a three-stage audio frequency amplifier driven by



a Western Electric double button carbon microphone. Because of the difficulties, in those days, of building a properly filtered rectifier to supply the plate power for the various tubes, batteries were used. For the power amplifier plates a battery of 600 fairly large storage cells was used.

The new station was dedicated on October 16, 1925. Approval for a Class B license was given and the call letters for the station were changed from KFDJ to KOAC. The first broadcast on the new call was on December 11, 1925.

About the time that the Physics Department moved into its new building in 1928, the radio station, due to the efforts of many people, was authorized to increase its power to 1000 watts. A new commercial transmitter of that power, built by the Western Electric Company, was purchased and installed. During this period the station was still in the Department of Physics under the direction of Dr. Willibald Weniger. Professor Jacob Jordan, assisted by Mr. Grant Feikert, was in charge of operation and of all technical aspects of the station.

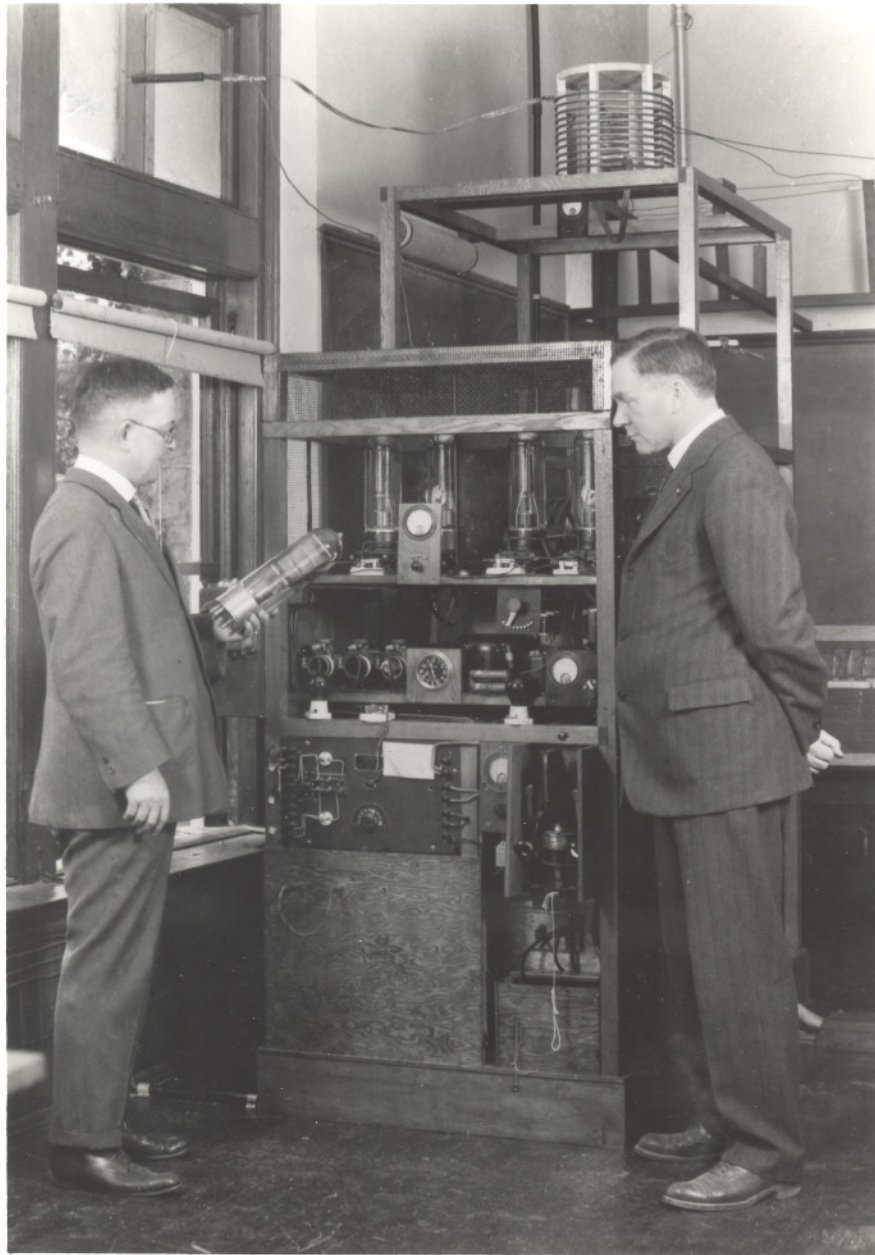
Radio station KOAC continued under the technical direction of the Physics Department until the academic year 1932-33. By this time it was clear that the total operation of such a station was outside the normal activities of a physics department. Administration was then shifted to the General Extension Division of Oregon State College.

In 1932-33, when Professor Jordan left the campus, Mr. Grant Feikert was made Chief Engineer and put in charge of all engineering and technical aspects of the station. Mr. Feikert had been identified with the development of radio in the Physics Department from about 1922, when he was still in high school. He operated the old spark set located on the north end of the second floor of Apperson Hall, worked with Professor Jordan both as a high school student and through his years as student for the bachelors and Masters degrees at Oregon State. He was active in the construction and operation, with Professor Jordan, of the old 50 watt and 500 watt home-made transmitters, as well as in the installation and operation of the 1000 watt Western Electric transmitter which was installed in 1928. Mr. Feikert is now Professor of Electrical Engineering, Assistant to the Director of Educational Media for Engineering and Chief Engineer for KOAC, KOAC-TV, and associated stations.

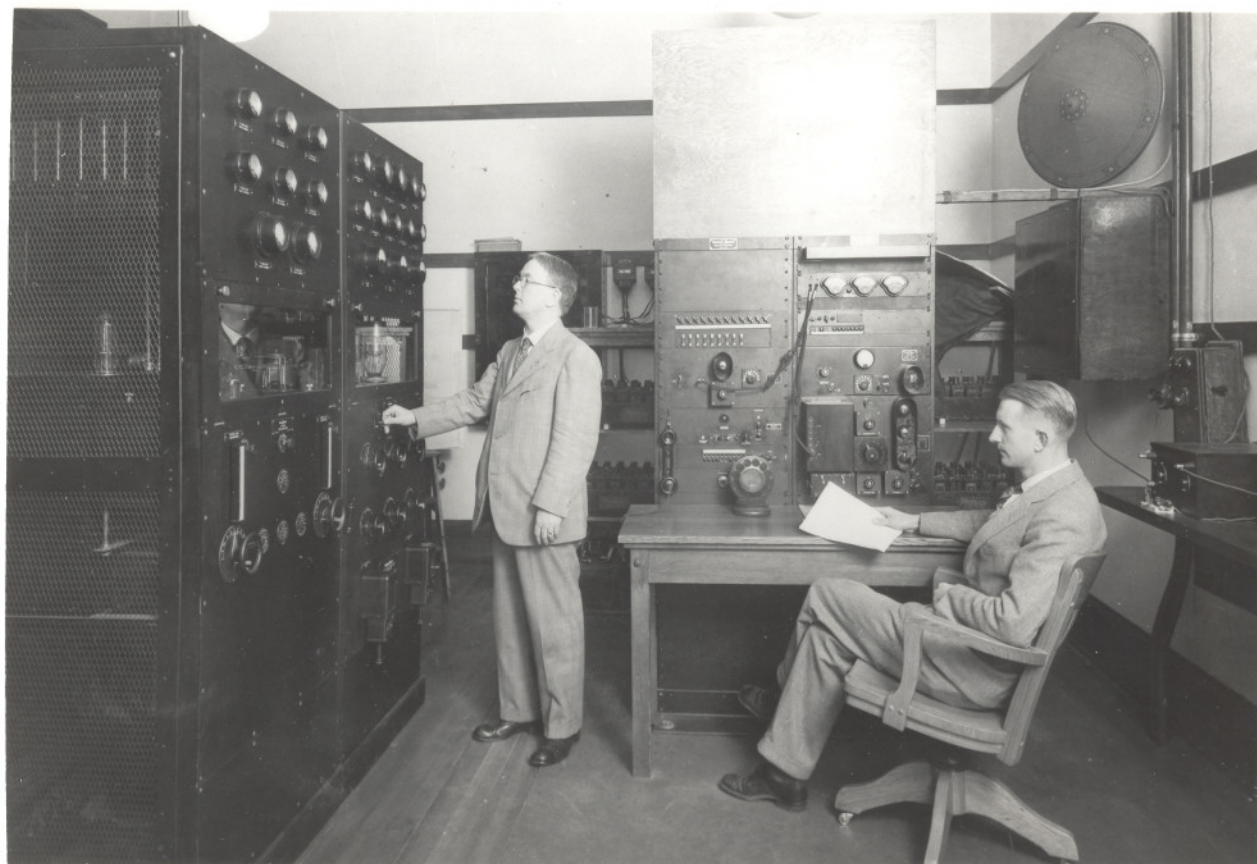


Jacob Jordan, about 1925, at the controls of the 500 watt transmitter which he built and operated as KPBJ.





Jacob Jordan, left, and Willibald Weniger in front of  
500 watt power amplifier, part of Oregon State's  
broadcast station KFDJ about 1925.



Jacob Jordan, left, and Grant Feikert at the controls of Oregon State College's new 1000 watt Western Electric transmitter operating under the call KOAC. The transmitter, and studies were on the third floor of the Physics Building. Taken about 1929.