

The Knowledge Bank at The Ohio State University
Ohio State Engineer

Title: The New University Telephone Exchange

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Bell and Automatic Systems, the exchange has again been remodeled, enlarged and improved.

The exchange which handles most of the telephones on the campus has been moved to the basement of the Chemistry Building. At present it has about 350 telephones and extensions, with a maximum capacity of 1,200 telephones. It is estimated that this telephone service costs the University about \$15,000 a year. This includes all of the telephones on the campus except those in the Commerce and Journalism building and the Hospital building, where separate PBX systems are installed.

The new exchange has automatic switching which handles all campus calls and all outgoing calls with the exception of long distance. Two manual boards are used to handle the long distance and incoming calls. Sixteen trunk lines connect the campus exchange and the Adams exchange and as they must handle all of the outgoing and incoming calls the operators are kept very busy, especially at noon and other busy periods.

The appearance of the switching room is similar to many other PBX systems. For the benefit of those who are not familiar with the general scheme of machine switching it might be well to trace the path of a call, for this is the best way in which to familiarize oneself with the methods used in machine switching. When the call enters, through a large cable, 900 pairs of conductors, it passes through a lightning arrester and heat coils, which thoroughly protect the apparatus inside from lightning or an accidental connection with a power line, then it goes to the connector rack. The connector is a complicated piece of apparatus which connects the line on which the call came in to the proper selector. This is done by means of rotary switch, which makes the connection according to the first two numbers of the party that is being called. The selector is another rotary switch, similar to the connector, that connects the line through the connector to another selector switch by means one one of ten trunk lines. The second selector switch then makes the final connection to the line of the party desired. The first and second selector switches are operated when the numbers after the second are dialed. As the 200, 300, 400 and 500 numbers can adequately take care of the present number of telephones the other numbers, with the exception of the 600 numbers, up to 1,200 are not used, but the board is so connected that when any number for which there is no telephone is called, the operator will answer and give the number of the desired party.

This system seems to be very complicated at first, but when the operation is once learned it is found that it really is not so complicated after all. Like many other processes when the various parts are analyzed separately it becomes merely the mastery of details, none of which are so very difficult.

We wish to take this opportunity to thank the Bell men who are installing the new exchange for their courtesy in taking time to show and explain to us the use of the apparatus which they have so creditably installed.

W. G. Hardy, '27.

THE NEW UNIVERSITY TELEPHONE EXCHANGE



IN 1906 the first telephone exchange was installed at the Ohio State University. Ten years later, in 1916, the demand for telephone service had so increased that it was necessary to rebuild the exchange, so a much larger exchange with machine switching was installed. Now in 1926, due to the union of the