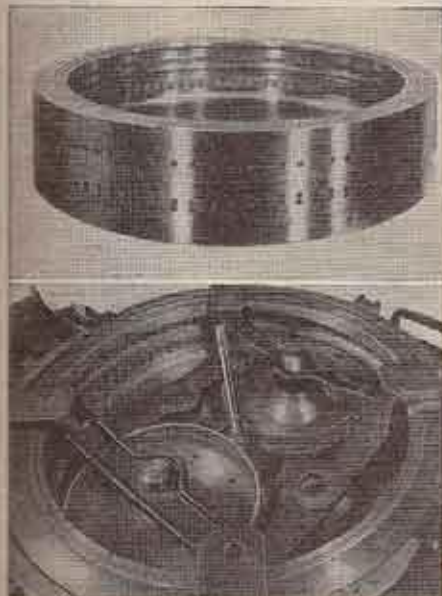


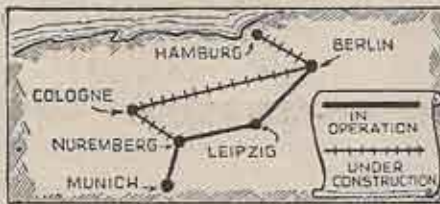
# You Can "SEE" Over This Telephone Line Between German Cities

Somewhat similar to the television system demonstrated about six years ago by the Bell Telephone Labs., in New York City, this new German telephone system carries the images as well as the voices of telephone subscribers.

● SOMEWHERE around six years ago the Bell Telephone Laboratories demonstrated television over a telephone system to hundreds of people in New York City, the images being carried over a special circuit



Here is the special scanning drum, which is fitted with lenses.



This map shows the great distance covered by the new German telephone-television system, cities over 100 miles apart being connected by this wire network.

connecting the Bell Telephone Labs. with a building approximately four miles distant in downtown New York. With improved transmission efficiency and new scanning apparatus, German telephone subscribers by paying a special fee, are now able to talk with and actually see the person at the other end of the telephone line, between cities like Berlin and Leipzig. A special booth is used wherever this service has been made available to the public and new infra-red lamps illuminate the person's face; this light although invisible to the human eye, when reflected from the face will cause the sensitive photo-electric cells to register the varying degrees of light and shadow. These cells convert the different degrees of light into electrical impulses, which are carried over the television circuits; the television image signals are transmitted over co-axial cables.



Above—The sound-vision booth at Berlin. As you talk to the person at the other end of the line you see his image as well as hear his voice.

This new *voice-image* phone service has been extended to Munich and auxiliary lines to Hamburg and Cologne are under construction. Thanks to the newly designed scanning drums, which are fitted with a new type of lenses instead of ordinary holes, the amount of light required to scan the subject has been markedly reduced. The scanning drums are, of course, driven at synchronized speed at all television-telephone station booths and are checked at regular intervals. One of the photos shows an

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Above—Actual reproductions of the television images of two persons telephoning to each other, as observed on the monitor in the telephone exchange.

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actual reproduction of the images of two persons carrying on a conversation over the system. The images shown are those observed on the monitor in the telephone exchange. In this way, the telephone operator has control over the service afforded the public, and if she sees that one of the faces, for example, is not very clear, she advises the person at that particular end of the line to move further away or closer to the apparatus, as the case may be. This instruction would invariably come at the start of the conversation and once the person had been told to move back or forward, so as to be in proper focus, he would subconsciously hold that position during the conversation period.

In the earlier models of the apparatus used to pick up the image from the television-phone booths, invisible infra-red light was used to illuminate the person's face.

Shortwave and Television, March 1938