

## Huge Task of Converting Phones to Dials Progressing



COMBINATIONMAN WAYNE C. SOUTHWORTH (right) receives his conversion orders for the day from Conversion Foreman R. T. Evans, who is supervising the conversion of all telephones to dial operation in Helena and East Helena. Southworth and eight other conversion installers are installing dials in preparation for the Helena dial conversion later this year.

CHECKS, PLANS JOB—After receiving his installation orders for the day, Southworth checks them to plan his job for the day and to determine what special equipment he will need. For example, he may find that some of the homes scheduled for conversion that day have colored sets, and therefore require special dials.

LOADS ALL NEEDED EQUIPMENT—Southworth loads necessary equipment (new sets where necessary) dials for colored sets, special tools, and other miscellaneous equipment into his installer's truck before leaving the company garage on North Last Chance Gulch.

### Actual Work of Installing Dial Equipment on Subscriber Phones Shown in Picture Story

Just what does a telephone conversion installer do when he reads a Helena telephone for dial operation?

In order to show the tremendous amount of detailed work and planning involved, we will show a day on the job with Combinationman Wayne C. Southworth, one of nine conversion installers now working in the Helena exchange area.

These men, under direction of Conversion Foreman R. T. Evans, and especially trained for the conversion, are charged with placing dials on all telephones now in place in the exchange. Dial telephones on new orders are being installed by Helena's regular force of combinationmen under City Foreman R. W. Andre.

The actual dial installation work began Jan. 3, and will continue until all of Helena's 10,000 telephones have been prepared for dial operation. However, telephone users will not be able to use the dials, and the new Hickory 2 numbers, until the entire telephone system is converted to dial operation later this year.

Along with installation of thousands of new dial switches, miles of telephone cable, and all the other allied equipment in the new \$1,000,000 dial office building at 414 North Park, installation of telephone dials is just a part of the year-long dial conversion work.

When all this work is completed, and each of the thousands of pieces of intricate equipment is fully tested, Helena's telephone system will be converted to dial operation at one time. This final cutover—expected later this year—will actually take about one minute.

Here is what Combinationman Southworth does on one typical day of converting telephone sets to dial operation:

First, he reports to the Telephone Company garage on North Last Chance Gulch. Here, he is given a number of conversion orders that he will complete during the day. The result of hours of careful office work before they reach the conversion installer, the conversion orders are allotted to the installers by their foreman.

Each order is scheduled for working according to location. When he receives his orders for the day, along with the other installers, he checks each one carefully. This gives him an idea of the parts of town he will visit and any special equipment he will

### Series of Open Houses Planned To Show System

The Mountain States Telephone and Telegraph company plans a series of open houses to show the public its new Helena dial system some time after the dial conversion late this year.

Because of the dial conversion activity in Helena during the past year, there has been a large amount of interest in the new dial equipment and building. However, it is impossible to allow the public to visit the scene of conversion activities in the building during actual work.

Therefore, a few weeks after dial conversion, a series of free, guided tours of the new building will be held. During this period all interested persons will be shown through the new building at 441 North Park, and will be shown all the wonders of the new No. 5 crossbar dial system, the new long distance switchboards, and everything else connected with the dial system.

But telephone officials emphasize that it is impossible, because of press of work and need for keeping the equipment rooms clean during installation to have public visitors before the conversion.

records group then corrects their records to show the work is done, and start developing new dial records for that telephone number.

After completing his dial conversions for the day, Southworth heads for the garage with the conversion orders marked completed. If he is unable to gain access to any home because of the absence of the resident, he so reports. These are done at a later date.

Although there are only nine conversion installers actually placing dials on telephones, there are many, many more behind-the-scenes workers on the Helena conversion. There is a large crew that does nothing but assign numbers to the telephones, prepare the necessary records, and originate the orders that are given to the installers. Another large crew of technicians has been busy for some time installing the tons of dial switches and other equipment in the new building. And, of course, operators are being trained in operation of the new long distance switchboard.

Actually, although much of it is not seen by the public, the work of a dial conversion is a complex, carefully planned job that takes many months of hard work.



COMPLETED UNIT—A picture of a Helena telephone with the newly installed dial, carrying a sample Hickory 2 number. Although the new dials all have the new numbers when installed, present numbers are left in place over the new number, to be removed by the resident after dial cutover. Telephone users are asked to use the telephones in the usual manner, using the present number, until after conversion. They are warned that the dials cannot be used until that time. At cutover time, the residents can remove the present number and the new dial number will then show.

### 'Audie' Will Give Subscriber Time But Nothing Else

A new, 600-pound, electrical operator will supply the time of day to Helena telephone users after dial conversion.

This shiny, electronic operator is named "Audie," short for audiophon. Audie is a machine with a recorded voice that automatically gives the time of day when a specially-assigned number is dialed.

Audie consists of a pleasant female voice, recorded on tape, that repeats the time of day three times a minute. She operates constantly, day and night. When the special number is dialed, she answers by saying "the time is —," giving the hour and minute. Then she automatically hangs up.

She will do nothing else. She won't answer questions. She won't refer you to another operator. She knows her job—and she does it.

So human does Audie sound over the telephone that telephone users find themselves saying "thank you" as they hang up. That's all right, though, because Audie likes to be thanked, even though she can't hear it.

Only about 4 per cent of mental patients in the United States are in private hospitals.

### Underground Wiring Eliminates Need Of Elevated Poles

One of the dial conversion activities most in evidence to Helena was the underground work done beneath the streets.

Just what was this work and why was it necessary? The under-street work consists of installing tile conduit and telephone cable that carried the city's new dial system to its more than 10,000 telephones.

Without this underground cable, it would be necessary to string the wire on poles. Years ago this was possible, but the number of overhead wires necessary today would almost blot the sun from view.

For example, there are almost 6,000 miles of fine wire in the underground cables being installed under the streets. There are various sized, lead-covered cables in the nine-duct conduits. The largest cable is more than two and a half inches in diameter, and contains 4,200 single, fine telephone wires.

This underground cable serves three purposes. It recovers the present cable distribution system on the new building on Park avenue. Second, it connects local service between the new building and the Jackson street building.

At time of conversion, all local service will be handled in the new building.

### Records of Dial Conversion Work On City's 10,000 Phones Is Important Phase of Actual Job

During the course of Helena's telephone dial conversion work, three small records groups will process more than 100,000 records, every one of them absolutely necessary.

The records groups are essential to efficient dial conversion. There are three groups: plant, commercial and traffic. They originate, distribute and file all records used during the dial conversion and thereafter.

There are only 21 persons in these three records groups; 13 in the plant center, five in the commercial center, and three in the traffic center. The plant records center is headed by Plant Assignment Supervisor R. L. Peden. The commercial records center is headed by Commercial

Dial Supervisor C. D. Crapo. The traffic group is headed by Traffic Supervisor Bernice Baer.

For each telephone assigned a new line and number during the Helena dial conversion, an assignment order is written in eight copies. This order originates in Peden's group. It contains the basic records memorandum, including the terminal address of the person for whom the telephone is listed, present type of service, present number, and any other pertinent information.

After Peden's group originates the order, it is sent to the traffic group, where a new dial number is assigned.

The order then returns to the plant group, where outside plant assignments are made on a dial basis. In other words, a record is made of the type and location of telephone wire or cable that will be used by this particular dial telephone.

The commercial group, under Crapo, then types the eight-copy service order with all this new information.

Peden's group then makes a new number plate, carrying the Hickory 2 number, and the order and number plate are filed by area.

Lastly, the conversion installation group, headed by R. T. Evans, picks up the orders and number plates to be placed on the telephone in homes and offices.

Why are the orders made out in eight copies? The telephone company has decided that this is the absolute minimum number necessary for dial conversion and operation. One copy goes to the traffic department for its information files.

Another copy goes directly to the business office for a permanent file, to be used in any future contact with the telephone user.

Another copy, the third, goes to the Montana accounting department for use in making up bills.

Th fourth goes to the directory department, where a new directory will be made up for use after dial conversion.

Two more copies, the fifth and sixth, go to the installation department, one for use by the conversion installer when he puts on the new dial, the other for the installation foreman's record.

An the final two stay in the plant and commercial records centers for future reference.

So you see, it takes a lot of records—more than 100,000 all told in Helena—and a lot of records typing, to make Helena's dial conversion go.

### Two Complete Phone Systems Will Be Needed at Cutover

In order to convert Helena's telephones to dial, it is necessary to have two complete telephone systems in existence for a short time.

At the actual time of conversion, there will be a completely new dial system ready to take over, and there will be the complete manual system still in operation. Then, at cutover, the manual system will cease operation while the dial system takes over. This actual change takes but a few seconds, but preparation for it and subsequent work takes months.

In order that Helena's telephones continue to operate, the manual system must be kept in top condition right up to the moment of cutover. But simultaneously, tons of new dial equipment, including thousands of brand new No. 5 crossbar switches, are being readied for operation.

Then, until the time of conversion, the old system will be working away in the present building on Jackson street. At the same time, the new system will be all shined, polished and tested to a high degree of readiness in the new building on Park avenue.

Comes cutover—planned later this year. Switches are thrown. Cables are cut or disconnected. Wires are connected. And in a few seconds, the old system is quiet and still—the new switches are clicking away—and a new dial system is in operation.

### All Seven Digits Must Be Dialed

Helena telephone users will have to dial all seven digits of their new Hickory or Academy 7 numbers to get their parties after conversion.

Because of the number of telephones involved, more than 10,000, and the type of equipment, the latest No. 5 crossbar dial switches, all seven digits must be dialed to reach another number.

So, telephone users in the Helena exchange area are urged to prepare themselves for correct seven-digit dialing after the conversion later this year.

In some dial exchange areas with seven digits, it is possible to reach another telephone number by dialing just four or five digits out of the seven total. This will not be the case in Helena.



CHECKS WITH SUBSCRIBER—One of the homes he visits is that of Ralph Traywick, 1220 Ninth St., where he is greeted by Mrs. Traywick and her five-year-old daughter, Connie. He tells her he has come to install dials on any telephones listed under the Traywick number, and asks permission to do the work.



HE MAKES SURE—Before working on the set itself, Southworth first checks the protector, located where the telephone drop wire enters the house, to make sure this particular part of the installation is in proper service condition. Needed repairs are made where necessary.



INSTALLS DIAL—Actual work of installing the new dial (carrying a seven-digit number beginning with Hickory 2 in Helena and Academy 7 in East Helena) at the home of W. F. Howard, 1704 Sixth. Notice that Southworth has placed a "drop cloth" over Howard's rug to prevent wire clippings or dirt falling on it.



USE INSTRUCTION—Mrs. W. F. Howard receives instructions on proper use of her new dial telephone. Installers always ask residents to listen to dial tone and busy signal, simulated for this purpose; to insure they will recognize it when the dial system goes into operation in a few months.