

year, maintaining them when necessary.

At Culebra a large storage tank is used for propane gas at each end of the siding, and the burners are automatically lighted by CTC control from the dispatcher's office at Clovis, N.M. Burners are taken up in the spring and stored in shelter houses until the late fall when they are again installed at the switches.

## Photography

*What use are you making of photography in signaling or communications work? Do you take photographs of new work, under construction and when finished, to provide a "pictorial" record? Do you make use of motion pictures or slide films for training purposes? Please explain fully.*

### Pictorial Record

By A. E. DEMATTEI  
Superintendent of Communications  
Southern Pacific  
San Francisco, Calif.

On Southern Pacific we do make some use of photography such as to record progress of major projects the most extensive use now being in connection with our microwave installation Dunsuir to Black Butte.

We have used photography to provide a pictorial record of almost every type and kind of radio installation. Also, considerable photographic work is used pictorially and for instruction purposes in connection with radar fault finder installations where these instruments are calibrated for measuring trouble on various types of wire line circuits at numerous locations over our system.

Slides are used frequently when talks are given before various groups and organizations. These slides not only portray progress made in radio and allied electronics, but are descriptive of intercity dialing networks, etc.

Photographic records are kept illustrating the progressive modernization of our communication plant. They are also used to illustrate standard installations for various types of telegraph and telephone installations.

### Visual Record

By G. K. THOMAS  
Signal Engineer, System  
Atchison, Topeka & Santa Fe  
Topeka, Kan.

On the Santa Fe, we use photography in signal work to make a visual record of signal construction

work in the field as may be necessary or helpful in designing layouts and plans in the office, such as preparation of standard plans for different kinds of signal installations, interlocking switch layouts, cable work, signal housings, etc.

Photography is also used as necessary to illustrate reports on different phases of signal work and to maintain a pictorial record for general use in signal engineering. So far we have not been able to develop any use of motion pictures or slide films.

### Photographs of Jobs

By S. W. MILLER  
Superintendent of Communications  
Nickel Plate Road  
Cleveland, Ohio

Although we do not use photography for training purposes in communications, photographic records of jobs in progress and jobs completed are valuable. Photographs of jobs are particularly helpful during discussions in the general office with supervisory personnel, in considering methods of doing work, use of special equipment, spare capacity of outside and inside plant installations, arrangement and

## Message Duplication

*Have you found a fast and satisfactory method of duplicating Teletype messages other than by hectograph ribbon and gelatine roll duplicating process?*

### Look for Other Methods

By N. W. MENZIES  
Superintendent of Communications  
Western Pacific  
San Francisco, Calif.

We are one of the many railroads that have in the past and are at the present time using the hectograph ribbon and gelatin roll duplicating process, due to the fact that we have as yet not been able to discover any other satisfactory means that would fit our particular requirements.

I have been advised that within the next couple of years the large flatbed Ditto machines will be discontinued, also that the gelatin rolls are becoming a thing of the past. For the past few months I have been investigating through the Ditto Company and the Columbia, a suitable process to replace our present method and so far have not run across anything that will compare with our present system. The

mounting of material, etc. A picture is worth a thousand words and many times, pictures we have taken of various jobs have been very helpful in discussions.

### Give Office Men Views of Field Work

By T. W. HAYS  
General Signal Engineer  
Union Pacific  
Omaha, Neb.

We have in the past used photographs of highway crossings taken from all directions, both on highway and the railroad, to give the men in this office a better idea of the location they were working on. This scheme is also applied at railroad crossings in connection with proposed installations of automatic interlockers. We have also taken many pictures of completed traffic control jobs, all of which were with the idea of giving the men in the office who had not had the advantage of field experience some idea of what was being done in the field.

As yet we have not made use of motion pictures or slide films for training purposes, but anticipate working out some such scheme for the future.

closest process we have given considerable attention to is the offset duplicator produced by the Ditto Company. This method, while it may be satisfactory, no doubt will be too costly for a railroad communication center, due to the fact that all Teletype equipment would have to be equipped with a special paper known as the master mat, copy of which is only produced in sheet form and could not be secured either by roll or fanfold at an economical cost.

### Use Duplicator Machine

By H. O. ROOKER  
Communications Supervisor  
Illinois Central  
Chicago, Ill.

Yes, we have an automatic Ditto duplicator machine which has a metal cylinder for holding the hectograph sheet. This cylinder also handles the Teletype page copies or similar paper forms on which messages are typewritten. When the duplicator operates, this metal cylinder revolves as part of the duplicating process.

We purchase the special paper in rolls that are sized to fit a standard Teletype machine. The paper is a two-ply continuous roll, the lower ply being a purple hecto carbon