

"Dry" Message Duplication Saves Money

● Like most railroads, the Milwaukee Road used the hectograph ribbon on Teletype machines for printing hard copies of messages and other telegraph traffic. From these, additional copies were made using a motor-driven gelatin duplicator. While economical in its day, which was several years ago, the CMStP&P began looking for a cheaper method and one that was not so messy.

The hectograph ribbon-gelatin duplicator method was a source of complaints because of odors arising from the gelatin rolls, stains leading to laundry bills for those who handled large files of original copies, and allergies to hectograph ink. As the manufacture of the machines used by the CMStP&P was discontinued several years ago, repairs to frequent breakdowns were costly, and the cost of rebuilding prohibitive.

Several duplicating processes were explored, but a major stumbling block was the negative or sensitized duplicating paper, which in some processes made the cost greater than handling the original message. Dry diazo duplicating appeared to be the most practical method, but a translucent paper for Teletype machines had to be provided at a cost comparable to their present hard copy paper.

With the assistance of various paper manufacturers and the Ozalid Division of General Aniline & Film Corp., a translucent paper was developed which proved satisfactory and less expensive than the paper used previously. "With this, the major part of our problem was solved," states F. T. Ross, relay office supervisor, CMSt-

P&P. Next they had to solve the hectograph ribbon problem. According to Mr. Ross, they wanted to obtain a typewriter ribbon that would not only give good legible copies, but would stand up under the constant pounding of heavy trunk circuits, and would not dry out quickly under the heat it would be subjected to in teletypewriter machines. The ribbon most suitable for these purposes was found to be more than \$5 less per dozen than the hectograph ribbons. The new ribbons last so much longer that the Milwaukee Road estimates savings of approximately \$3,000 annually, on ribbon consumption.

Copies of messages, reports and other multiple addressed printer traffic are made quickly and cleanly with the Ozalid process. The hard copy is torn off the teletypewriter and placed on top of the duplicating paper. Both are fed into the Ozamatic machine, which produces the duplicate in a few seconds. The machine produces copy at a variable rate up to 30 ft per minute. Normally, these machines are operated at a somewhat slower speed, particularly during periods when business is light, in order to reduce wear and tear on mechanical portions of the equipment. An 8½-in. by 14-in. sheet can be reproduced in approximately 10 seconds. The original equipment has been in constant use, day and night, for approximately 218,465 hours without a single major servicing.

The new Ozalid system has eliminated the use of special creams or soap to remove hectograph stains from operators' hands, the cost of which was

considerable, as every office receiving these duplicated messages had to be supplied. Other savings have been realized, such as laundry bills and allergy treatments, accruing a saving of \$1,500 in one office.

Maintenance on teletypewriters has been reduced since using the new dry diazo process for duplicating. Machines are cleaned only when taken out of service for repairs. Formerly, frequent baths were necessary to clean off dye deposits left from hectograph ink. This was particularly true on model 28 printers when hectograph ribbons were used. It was necessary to clean type boxes at least once a day and sometimes oftener. With the present Ozalid process, type boxes are removed only when they are defective.

New Machines in Four Offices

The Milwaukee Road is using Ozamatic duplicators in their communications relay offices at Chicago, Milwaukee, and Tacoma, Wash. In addition, one is in service in the engineering office at Chicago for use by the signal and communications forces. According to Mr. Ross, "additional savings are created by the reproduction of material which previously was done manually, and new uses are being found daily." For example, formerly copies of engineers' estimates were typed. With the diazo process, for less than one cent per copy, duplicates are obtained from the engineers' original drafts.

Requisitions, completion reports, and other forms are reproduced on the Ozamatic machine in the same manner. Permanent reproducible copies on dimensionally stable film are obtained from pencil sketches. Copies of letters are reproduced at a fraction of the former cost. Large reports covering system operation, requiring from 20 to 30 copies, previously reproduced by retyping several times, are now being duplicated with the Ozalid process. "This not only reduces the time and expense, but eliminates possible error in retyping as well," says Mr. Ross. The process also provides quick check prints for draftsmen, which formerly had to be produced by an outside supplier. Time in obtaining these check prints has been reduced from hours to minutes.



Milwaukee Road's Ozamatic machine produces dry copy from translucent original.