

Continuous study has been given to improvements in manufacturing processes. Keeping in mind the high cost of materials and competitive times ahead, changes of wide scope in tooling and formulation have been under study. These were necessitated by extensive revival of research in brake improvement by our customers, which got under way this past year at a greater pace than at any time since the beginning of the war. The widespread interest in cementing lining to metal shoes rather than riveting has necessitated studies in our laboratory leading to the development of improved physical properties by the use of new materials. Improvements in brake lining testing technique throughout the automotive industry and a tightening up of performance requirements have necessitated development of better compounding and processing, in which progress can be reported with retention of the essential steps of our current processing and with a minimum addition of new steps. There has been improvement in the processing and evaluation of products of Mahwah chemical research. A considerable portion of dynamometer operation time has been consumed successfully in testing technique research in an effort to attain better correlation between road testing and laboratory testing.

A new project has been started this past year in the development of the railroad tie-pad. While work to date has been largely exploratory in an effort to crystallize the many varying ideas among the railroad maintenance-of-way men on the preservation of ties, we feel that considerable should be accomplished in the use of a suitable tie-pad in conjunction with proper hold-down spikes, such as the Ramapo spike. This has developed into a cooperative project with Ramapo and Brake Shoe and Castings.

The development staff will continue its effort to improve pressed products from both the functioning and cost standpoint as well as to develop new ones. We will continue to gauge our research on the basis of superior quality as it is believed that as normal competitive conditions return to this industry, quality will remain the main factor in maintaining and improving our relative position.

Production facilities for safety tile have been available at Winchester since the first part of 1948. However, large scale field test installations have been withheld due to lack of a satisfactory adhesive. The solution of this problem should be reached in the near future.

Recent progress in our V-Belt research has caused us to delay a decision regarding the advisability of our continuing or withdrawing from this field.

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