

before winding or coated onto the tube in place of conventional linseed oil. Unfortunately the tendency to split on firing is increased by these expedients unless the urea-formaldehyde is plasticized. Some promise has been shown in brief tests on the latter possibility.

This Quarter's Work:

All the work described above has been accomplished during the last Quarter.

Proposed Next Quarter's Work:

It is planned that the proposed "Study of Paper Shot Shell Characteristics" shall continue the evaluation of the more interesting "water resistant paper shot shell" possibilities.

Project: Investigation of Limestone-Clay Target Dope - TP-3431.  
Personnel: G. E. Hutchinson  
Authorized Amount: \$3,000 Total Expended to Date: \$3,435

Nature of Problem:

Ultimate economy and increased production will be attained if we can replace all or part of the current clay filler in targets with limestone. Previous experience had indicated a change in weight and an increased cracking tendency on storage if limestone were to replace clay. Laboratory work and several plant scale target molding runs were planned to evaluate the situation and determine alleviating means.

Summary of Progress from Inception:

Confirmation of the greater cracking tendency on storage of limestone-containing targets was indicated by the tests run to date. However, an apparently satisfactory formulation involving replacement of half the clay with limestone was established on the basis of both laboratory and trial production runs. Furthermore, a cross section change, virtually undetectable to the consumer, was shown to reduce the cracking tendency to at least that of the conventional clay target.

This Quarter's Work:

Work was all done within the last Quarter.

Proposed Next Quarter's Work:

A fairly large plant scale run with the half-limestone, half-clay formulation and with both conventional and modified cross sections will be completed.

Project: Transmuted Wood - Part I: Impressed Checkering - TP-3438  
Personnel: D. R. Adessa  
Authorized Amount: \$2,500 Total Expended to Date: \$942

Nature of Problem:

It has been said that the most expensive single labor