

Project: Caliber .50 Aluminum Case - TP-3390.  
Personnel: D. R. Adessa, J. P. Catlin, R. T. Catlin, G. R. Eckstein, C. W. Greenhalgh, G. E. Hutchinson  
Amount Authorized: Research - \$33,000 Equipment - \$47,500  
Total Expended to Date: " - 31,770 " 8,375

Nature of Problem:

Because of the overall weight saving of almost 30% in the loaded caliber .50 round accomplished by an aluminum case, the Ordnance Department sponsored a development with Remington to develop a satisfactory caliber .50 aluminum case for high altitude aircraft use.

Summary of Progress from Inception:

A hot-extrude-and-draw process and certain specialized equipment required by the process have been set up and upwards of 2,500 cases have been fired. The chief casualty difficulty to date has been that of primer leak erosion. An appreciable number of constructions was evaluated to insure the absence of primer leaks and one of these, the Conical Washer Primer, appears to have done this satisfactorily.

This Quarter's Work:

Work was concentrated on conceiving and evaluating constructions to eliminate primer leaks. This appears to have been accomplished with the Conical Washer Primer, 1500 of which have been fired without any leaks. A Progress Report on the first phase of the development was submitted.

Proposed Next Quarter's Work:

It is planned to manufacture upwards of 10,000 cases using the Conical Washer Primer and to fire them under various severe conditions. If successful, it is presumed that this will lead to a pilot production of 100,000 rounds to be covered by a new supplement to the contract.

Project: Water-Resistant Paper Shot Shell - TP-3423  
Personnel: D. R. Adessa  
Authorized Amount: \$4,500 Total Expended to Date: \$4,052

Nature of Problem:

Means for reducing the water sensitivity of paper shot shells by the use of resins, preferably water dispersed, with or without conventional waxing, are being investigated. The relatively low cost of several new water-dispersed resins gives promise that an approach to the water resistance of the conventional lacquered shot shell can be attained much more economically and with less processing hazards.

Summary of Progress from Inception:

A high-spot investigation of the various possibilities has been made. Excellent water resistance has been obtained by the use of urea-formaldehyde either "tub-sized" into the paper