

ACTIVITIES OF TECHNICAL DIVISION

G. O. CLIFFORD, MANAGER

FOURTH QUARTER, 1944

AMMUNITION SECTION, R. E. EVANS, MANAGER

RESEARCH UNIT

Chemical & Metallurgical Group - W. L. Finlay, Group Leader

Project: All Metal Shot Shell, .410 Gauge - B-79 (TP-3011)
(12 Gauge report on page 17)

Personnel: H. T. Clark, G. R. Eckstein

Authorized Amount: \$11,500 Total Expended to Date: \$3,250

Nature of Problem:

To develop an entirely satisfactory extruded aluminum .410 shot shell up to the field test stage.

Summary of Progress from Inception:

Several special techniques were developed to obviate the extrusion difficulties introduced by the small diameter of the shell. The .410 shot shell is loaded to the highest pressure level of any shot shell and the case must correspondingly be strengthened. A satisfactory combination of case geometry and alloy content has apparently been arrived at for satisfactory ballistic performance.

This Quarter's Work:

A radically new method of extrusion and head formation, referred to as Profile Extrusion, was developed. This greatly simplifies the processing of the case and, moreover, permits a variable wall geometry not possible with conventional extrusion. A small amount of ballistic testing has indicated that satisfactory performance may be obtained with Profile Extruded cases even with commercially pure aluminum (28).

Proposed Next Quarter's Work:

It is planned to process several hundred Profile Extruded cases in order to settle a miscellany of minor points. Following this, several thousand cases will be fired at a relatively high pressure level in as wide a variety of .410 guns as possible for functioning and casualty.

Project: Plastic Gun Stock - B-259 (K-3054)

Personnel: W. L. Finlay

Authorized Amount: \$5,200 Total Expended to Date: \$1,997