

4/23/1980
SP # 1

Research Progress Report

Product Development

Models XSG XPG Shotgun Design

New alternative locking system components are approximately 50% completed.

A commonality XSG-XPG chart for parts common has been completed.

A model has been assembled utilizing a new longer round wire action spring. Preliminaries are being done to work up a rifle size and bolt velocity with a larval and M/1100 type parts and parts used.

The computer simulated model is still being evaluated for an effective gas cut-off, rifle system. The shooting model is in test for evaluation currently.

Highlights

M/XSG Shotgun - A model is ready to resume testing with a new lower stressed action spring and a modified m/1100 type gas system. The ^{primary parts} including slide block action bar joint is being perfected.

Model XSG Shotgun

New autoloading and slide action shotguns are being developed for introduction in the 1984 model year. The objective of the program is to replace the Model 1100 autoloading shotgun and the Model 870 slide action shotguns with improved version which will be lighter in weight. The guns are being designed simultaneously to take advantage of

Sh #2
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Common parts for reduced manufacturing costs.

Four prototype model guns have been used in the development and testing of the improved model auto loader. A total of 45,000 rounds have been fired between these four model guns and have indicated need for improved design modifications in the locking system and action bar, slide block joining assemblies.

Two new locking systems are currently being built. Barrel assemblies are completed for these locking systems and breech bolts, locking blocks and slide blocks are in the process of being built.

Preliminary testing of the previous 456 model updated with new action bar assembly and 1.200 longer and wire action spring and model 1100 type piston, used has begun. This will enable us to monitor spring set as compared to previous spring design. Also a square wire design spring is presently on order from Emmert's Spring.

A gas cut-off system has been made and is being tested in a m/100 to determine effectiveness of this system as to controlled bolt velocities between light and heavy loads.

Model 700 Bolt Lock

The bolt lock displayed at the April Operation Comm. Meeting. Has been revised to eliminate a sharp edge and has been fabricated for assembly and testing on five Bolt Action Carbines. Testing is planned to start the first week in July.

Model 700 Fire Control

New Components for the #1 Design have been received and been assembled and will be tested.

The third design which combines both current M-700 and desirable features of Design #1 & #2 is being fabricated and assembled for evaluation.

Model 700 Fire Control

New components for the original (No. 1) design have been received and assembled, and will ~~be~~ be tested.

The third design which combines desirable features of Design No. 1 and Design No. 2 (G. BAILEY'S DESIGN) with the present M-700 fire control is being assembled for evaluation.

^{Design}
No. 2 has design problems (tolerance) development work is proceed to resolve these problem

21 mm Seismic Gun

The 21 mm Seismic Gun is being developed for MAPCO for use in their seismic exploration for oil, gas and mineral deposits.

Since the last report two types of firing pin retracting blocks have been designed and tested. The two designs are an inertia retract model and a cam operated automatic retract model.

The testing has been confined to live firing and firing primed empty case. The inertia retract model has fired 789 live rounds and experienced 75 misfires. The automatic retract model has fired 5755 rounds and experienced

a total of 159 misfires.

Because of the favorable misfire ratio, the inertia retract model has been ^{tentatively} selected for production. The automatic retract will still be developed for possible production.

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H. G. H. 5.19.42.

The inertia retract model has been tentatively selected for production due to a more favorable misfire rate.