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RESEARCH DEPARTMENT

HIGHLIGHTS REPORT

JULY 1980

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FIREARMS

Model XSG Shotgun

Testing is in progress on an XSG with a modified Model 1100 gas system and new square wire action spring.

Model 700 Bolt Lock

Preliminary testing of the bolt lock design on the Bolt Action Carbine has been completed with favorable results. Production cost estimates are being reviewed.

Seismic Project

Twelve guns were proof tested and accepted for shipment to MAPCO.

Primer mixture modifications to reduce the potential for high resistance have proven successful. July commitments to MAPCO will be warehoused by month end.

During recent proof and endurance testing a misfire rate of about 2% has been observed. The cause of misfires is unkown and testing is in progress to isolate gun, ammunition and power supply contributions.

Model 870 Competition Trap Shotgun

Strain gauge testing has indicated that a buffered piston will reduce the stress on the vent rib of this model to a satisfactory level. Two competition trap shotguns with the latest designs incorporated in them have been fired in excess of 17,000 without vent rib or post failure.

Four-Slide Machine

The four-slide machine is now complete and ready for tooling. A quotation has been received for tooling to produce the Models 7400-7600 Magazine Follower.

Integral Ejectors

Cost savings of $46,900 per year will be realized with the Model 1100 - 12 ga. integral ejector which is now in full production.

Rivetless Extractors

Rivetless extractors on regular (30-06 caliber) and small (.222 caliber) sizes have been satisfactorily field tested in the new bolt action carbine.

Auto-Drill Line

The millwright work is now being completed around the chip system. Oil procurement is scheduled so that the system can be filled and started during the first week of August. The machine line should be ready about two weeks later.

Laser Welding

Metallurgically sound welds of the Model 1100 powder metal slide blocks and the XSG 8620 slide blocks were obtained. Welded samples will be available August 31 for functional testing.

Laser Wood Carving

A quote was received from Lasermation for the DU emblem engraving on the side of the LT-20 stock at -

$8.42/unit for quantities of 1,000
$8.25/unit for quantities of 2,000
$8.08/unit for quantities of 4,000

AMMUNITION

SHOTSHELL

New Unibody Shotshell Process

Extended runs of 2-3/4 and 3-inch 12 gauge bodies were completed on schedule. Modifications made to the heatset system resulted in the highest operating efficiency demonstrated to date. Installation of the prototype die set is now is progress.

Polymer Improvement

Evaluation of Chemplex resin gave good product performance, but exhibited a high frequency of body defects during body forming. Samples of resin with an internal lubricant and a slightly lower density will be supplied by the vendor to alleviate the problem. A Marlex resin has also been ordered for evaluation.

20 Gauge Magnum Steel Shot Loads

For a field test program, 10,000 rounds of 20 gauge SP magnum 7 oz. #4 steel shot ammunition are being prepared in the Research semiworks. Shipment will be made by mid-September.

Asbestos Basewad Elimination

A combined experimental/trial & pilot AH&P run for the 20 gauge plastic basewad shell was successfully completed. Primed shells were loaded and product acceptance testing is in progress. Product acceptance tests on the 3" 12 gauge "RXP" shell were successfully completed. A trial & pilot production run of this product will be scheduled by the Bridgeport Plant.

7mm Mauser 140 Gr. PSP

Experiments with handloaded cartridges using commercial bullets, identical to those currently loaded in 7mm-08, were conducted with satisfactory results. An experimental run of this cartridge is being planned.

RIM FIRE

22 Rim Fire "Scorpion" Cartridge

An experimental,high speed autoloader run of the "Scorpion" cartridge was completed and product acceptance tests are in progress.

PRIMERS

Integral Anvil Battery Cup

The die was successfully tested by the vendor. Acceptance of the system was made and the press and die set were shipped from Belgium on July 14th. Techniques to insert paper in the battery cup to cover the flash hole have been demonstrated on laboratory equipment.

TLX Priming Mixtures

Rim Fire TLX mixture produced using nitrocellulose to improve charging characteristics has successfully passed all processing, storage and research product performance tests. A product run of mixture using the latest formulation is scheduled for early September. TLX shotshell primer mix was prepared and indications are that a single pellet weight may satisfy the ignition requirements for all loads. Sensitivity of this mixture was equivalent to that of the current process.

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