

FIREARMS

NEW PRODUCT DEVELOPMENT

XSG/XPG Shotgun Design

Preliminary tests are in progress on a new gas system featuring two orifices in tandem. Two of the new carrier latch contingency designs are expected to be in test by the end of December.

A rear locking system has been detailed for use in XSG/XPG to reduce the cost of the locking block and slide block.

Components for four XPG pump guns are expected to be completed by December 15.

Model 7400/7600

Ten new design magazine box assemblies (utilizing a plastic follower, coil spring, and redesigned magazine box) have been turned over to the Test Lab for field function and endurance.

New samples of the current magazine boxes fabricated to gage have been received and give comparable results to boxes adjusted to gage.

Model 4 Limited Edition

All model drawings for cost estimating have been turned over to Process Engineering.

Model 7 Bolt Action

A second Model 7 prototype in a long action is now scheduled for completion in mid-December.

Bolt Action Carbine

Drawings and parts lists are being transmitted.

Research Department

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November 1981

CURRENT PRODUCT DEVELOPMENT

Model 870 Competition Trap Shotgun

Testing of five shotguns with various bolt to receiver clearances indicates that a maximum of .035 inch will prevent receiver cracking.

Initial testing indicates a long barrel extension reduces receiver strain by approximately 50%.

Model 700 Upgrade

Five ADL and five BDL models will be ready for Marketing review by the end of November.

Model 1100 Ducks Unlimited 1981

Trial and pilot trade gun tests will be complete by the end of November.

PROCESS DEVELOPMENT

ASEA Manipulator

The ASEA IRb-6 is too light for Production. Project RXI-63 will be closed. The ASEA will remain in Research for future development work.

Torlon Piston Seal

The molding vendor has revised its tooling to produce rimgated parts. This should eliminate weld line cracking. Parts are expected by the end of November. The vendor has also been requested to requote on production quantities.

Manipulator Loading of Machines

Industrial Engineering issued an evaluation of this program showing a \$291M gross annual savings and a 37.2% return on investment. This information has been forwarded to the Firearms Modernization Group which has been assigned responsibility.

Laser Welding

One of the XSG laser welded action bar assemblies has been function tested to 1200 rounds.

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November 1981

AMMUNITIONShotshellNew Unibody Shotshell Process12 Gauge

The problem of burrs from trim and skive has been corrected through a change in cutter geometry and demonstrated on a Duplex loader. Confirmation firing tests are being conducted.

20 Gauge

The Technical Data Package for 20 gauge 2-11/16 and 2-7/8 inch bodies has been issued. Testing to date indicates performance superior to both Remington and competitive control ammunition. Heading and loading of low base field samples is scheduled in Lonoke on December 7-9.

8 Gauge

Casualty testing indicates that 8 gauge Rotary Cam product is superior to Remington control in terms of function and body integrity. Ballistic pressures increase substantially more in 150°F testing in Rotary Cam product than in standard product. Efforts are being undertaken to reduce this pressure increase although no failures have occurred.

28 Gauge

Further tooling modifications are being performed. All system change parts have been installed. Shootable samples are scheduled to be available by December 4.

16 Gauge

First try tooling is 80% complete.

Primer Basics

Tests indicate that room temperature ballistic performance (V&P) of target loads is relatively insensitive to the nitrocellulose content of the mixture. Comparison of Lonoke and Bridgeport processes are underway to resolve Lonoke's processing difficulties and to develop firm process specifications.

Anvil Battery Cup Primer

The ABC press was run to produce 100,000 components which were subsequently washed, plated, assembled into ABC 202 primers and dried. These primers will be loaded into a 12 gauge promotional sample by Production for testing by Technical Services.

Research Department

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November 1981

Polymer Process and Body Cut-off Study

With assistance from ETL, we will conduct fully instrumented tests on extruders at Pencader and Bridgeport to determine causes of dimensional variability and assess equipment differences. The Pencader test is scheduled to begin December 7 using Soltex polymer.

Asbestos Elimination

A 20,000 round Simplex AH&P run of 8 gauge plastic basewad shells has been completed with assembled product meeting all gauging and head pull requirements. A portion of this experimental sample was plant loaded and is now undergoing product acceptance tests. Major emphasis during this run was placed on the determination of allowable dimensional control limits for basewad slugs.

CENTER FIRE

Extended Range Center Fire Ammunition

Hercules testing of the 223 Rem 55 gr. PSPBT cartridges has been completed with satisfactory results.

Time and temperature data for stress relieving cartridge cases to achieve acceptable bullet pull without cannellure; has been received from W.S. Morrison, and ESD Materials Consultant. Tests for confirming his findings have been initiated.

7mm Bench Rest Case

This project has been discontinued and introduction of this product was cancelled.

The neck and mouth sections of this case are 23% thinner after taper than conventional 7mm products.

Shells drawn sufficiently thin to be tapered to this dimension are damaged beyond acceptable standards throughout the process between cut-off and taper. Shells drawn thick enough to survive the process between cut-off and taper fail the taper profile gauge check because of thick necks. This gauge check insures adequate clearance between a loaded cartridge and its chamber in the neck and mouth area. Lack of clearance could result in a high chamber pressure condition.

357 Rem Max 158 Gr. SJHP

Sixty thousand cases have been processed from cups through pierce and prime. These cases will be machine loaded and tested to establish confidence in the product's performance.

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November 1981

Rim Fire

"Viper" Rim Fire Cartridge

A 375,000 round trial and pilot run of the "Viper" rim fire has been completed and the product met all ballistics, accuracy and function and casualty criteria. Production start-up is expected in February, 1982 when packaging material arrives.

JPGlas:j1
12-3-81

Research Department

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November 1981

RESEARCH PERSONNELRemington Roll

	<u>Actual</u> <u>10-31-81</u>	<u>Actual</u> <u>11-30-81</u>	<u>Forecast</u> <u>12-31-81</u>
EXEMPT	60	60	61
NONEXEMPT	21	21	21
WAGE	23	23	23
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TOTAL	104	104	105

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PATENTS & TRADEMARKS

Summary of Activity

November 1981

Patent Applications Filed

N O N E

Trademark Applications Filed

N O N E

Patents Received

EXTRACTOR ARRANGEMENT FOR FIREARMS
(Rowlands)

RA-0228 CIP SPAIN

ABSTRACT:

A cartridge extractor, developed for Models 7400 and 7600, is assembled in a shrouded bolt face simply by snapping it in place. No rivet is required, which will greatly facilitate replacement in the field.

Trademarks Received

N O N E

Inventions Reports

N O N E