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RESEARCH DEPARTMENT

HIGHLIGHTS REPORT

OCTOBER 1982

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FIREARMS

Model 870/1100 Special Shotguns

Samples of the Model 1100 Special, 12 gauge, Field Grade shotguns have been completed for presentation at the Gun Writers' Seminar and Sales field force personnel in November. Model drawings will be complete by mid-November. Samples of LT-20, Field Grade guns will be available by the end of November.

Model 7400 and 7600 Center Fire Rifles

Priority has been placed on completion of the M/7400 in the .223 caliber for production in 1983. The primary technical question concerns development of a magazine box to provide acceptable feeding. Malfunction rates with the current five (5) shot box design have not been acceptable. Revisions to the follower and spring are in progress. Styling modifications are also being considered.

New Bolt Action Rifle

Design and fabrication of prototypes are progressing towards completion of models during the first quarter of 1983. Drawings for the rotary magazine box and new extractor have been released for fabrication of samples in the Model Shop.

Model Seven Lightweight Rifles

Trial and pilot testing of .308 caliber rifles is in progress. The premature opening of the floor plate cover on several rifles is being investigated.

Rifles in .223 caliber are being fabricated for testing as a future addition to this model.

Model 700 ADL Restyle

Forty (40) rifles in .30-06 caliber have been shipped to Bridgeport for use at the Writers' Seminar if required.

Model 700 BDL Short Action Left Hand Rifles

Prototype left hand barreled actions in .243 and .22-250 calibers have been completed. Stocks are in process. Complete rifles will ready for testing in November.

Model 700 Classic Rifle in .300 H&H Magnum Caliber

Trial and pilot rifles are being assembled by Production and will be ready by the end of October.

Model 700 BDL in .223 Rem. Caliber

Production has started components for a trial and pilot run in November.

Model 870 Police Shotguns

Work is continuing to identify an acceptable solution to the jam condition which occurs when a shell is inadvertently slipped past the feed latch and is trapped between the carrier and the slide. Modifications to provide a stop surface on the carrier to limit shell travel have not been successful.

Current plans specify addition of 12 Gauge 3" Magnum, 18", full choke, plain barrels for 1984. When tested for point of impact, prototype guns were found to shoot high. Front sight ramps are being designed to bring the point of impact within Remington specifications.

FIREARMS MODERNIZATION

Receiver Flexible Manufacturing System

All data necessary to choose a vendor for the prototype four spindle machining center will be in hand by mid-November.

Development of the critical technology items; inspection, tool preparation and handling, material handling, process monitoring, and the computer control system are proceeding as scheduled toward project authorization in late 1Q85.

GFM Automation

The appropriation request for two automated GFM systems has been completed and is currently in Bridgeport for Management approval. The third year (1987) economics indicate a gross savings of $180M/yr. with a ROI of 19% on a $570M investment.

Shotgun Breech Bolt Machining System

Initial machining tests to develop cycle times, power requirements, cutting tools, and fixture concepts are expected to begin this month in the R&D NC test center. Upon completion of these tests, Remington and EDL personnel will begin detailing development of a flexible manufacturing system for shotgun breech bolts.

CNC Long Stock Inletter

Stock blanks, the machine fixture, and the required cutters have been shipped to Japan in preparation for the machine acceptance test tentatively schedule for early December.

New Unibody Shotshell Process

Development of the 12 gauge high volume body is receiving top priority. A 50,000 body experimental run in semiworks is nearly half complete. Experimental runs on Plant AH&P and loading equipment will be expedited. Tool drawings for the body former were transmitted for ordering production tooling.

Polymer Support Program

The Bridgeport Plant has equipped a second extruder with the ultrasonic wall thickness control system. Both extruders are performing well. Lonoke has ordered equipment to test run a gear pump extrusion line on gamma gauge wall thickness control.

12 Gauge - 1 Ounce Target Load

The Trial and Pilot run has been delayed one month to early December due to packaging and shell printing revisions. Research molding and testing indicates that a lower cost resin can be used in the RTL wad, required for this load, with equivalent low temperature performance. Confirmation molding will be conducted on production equipment.

Integral Anvil Battery Cup

Efforts are underway to improve the ABC primer so that it is acceptable for use in Target Loads. The feasibility of increasing flash hole area by adding a fourth hole is being explored in an attempt to allow the primer to use 1024 mixture. Alterations to mixture chemistry to improve primer casualty, as an alternate route, also shows promise. Preliminary testing with basic lead styphnate instead of our standard Polnol allowed a substantial increase in primer pellet weight without primer casualty.

Rifled Slugs

Machine loading of the 20 gauge - 3/4 ounce rifled slug did not reproduce the hand loading accuracy or equal current control product. Revised tooling is being fabricated as well as tooling for a heavier 12 gauge slug.

Wad Cost Improvement and Reduction

Improvements have been made to the reloading characteristics of the 28 gauge "POWER PISTON" wad by adding four small struts to the compression section. Tooling is being prepared for an experimental run to test compatibility with factory loading.

Wad Cost Improvement and Reduction - Cont'd

A reduced cost, improved performance 12 gauge 1 ounce - 1-1/8 ounce Target Load component wad is being developed and has been tested with single cavity tooling. Wads have been molded for evaluation in the Lachaussee loader since this wad is a strong candidate for the Remington Target Load.

357 Rem. Max. 158 Grain SJHP

Evaluation of Olin WC669 powder has been completed and a velocity specification of 1800 fps (instrumented, vented test barrel) has been established. Specifications for standard and proof ammunition were transmitted to Ruger along with the statement that Remington would be controlling velocity using the vented test barrel. Verbal agreement was received.

Experimental loading of standard and proof ammunition is underway and the Trial and Pilot run will commence as soon as product testing is complete.

Engineering Research & Development

Shotshell Body Forming Equipment

Repair work on the Bridgeport machine system continues. The new main cam will be reinstalled. The bulk of fabrication orders and commercial items will be received about mid-November.

In addition to the repair work, some upgrading of the body former and heat set modules has been undertaken. This work is also progressing well. The overall schedule is to have the equipment back in operating condition on January 7, 1983.

Laser Inspection - Lachaussee Loader

Conversion of the laser inspection unit, to accommodate primers with paper covered flash holes, could not be completed last month because of redirection of effort to higher priority work. Completion is rescheduled for third week in November. Installation of the unit on the Lachaussee Loader will be scheduled by Production at Lonoke.

Paper Covered Flash Hole Primer Equipment

Both machine systems, one at each ammunition plant, are in operation. Modifications and debugging are complete. The equipment is operating satisfactorily. Manuals have been prepared and will be issued during November.

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RESEARCH PERSONNEL

Remington Roll

	9-30-82 Actual	10-31-82 Actual	Forecast 12-31-82
Exempt	65	66	62
Nonexempt	23	25	25
Wage Roll	24	22	22
Total	112	113	109