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Remington Arms Company, Inc.

Firearms Research

Third Quarter Progress Report - 1984

September 14, 1984

Distribution

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HIGHLIGHTS

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Shotgun Development

- o ~~Sensitivity~~ ^{Development and} testing of automatically compensating gas systems for the Model 1100 ~~indicate a need for further development.~~ ^{functional improvement} Initial testing of a manually compensating system looks very good. 2
- o Revised specifications for the Model 1100 Restyle will be supplied to Production this month. 2
- o Members of Remington Research and the Du Pont Engineering Department participated in a ~~brain-storming~~ ^{brain-creative} session on the New Concept Shotgun. 3
- o Design and testing of the Remington choke tube system is complete. Drawings have been transmitted to Production. 3
- o A drawings package and parts list are being prepared showing the revised specifications for the Model 870 Restyle. 3
- o Research has approved Production's trial and pilot sample of the Sportsman 12 Auto. 4
- o Drawings have been transmitted for the Model 1100 Special Field Ducks Unlimited offering. 4

Rifle Development

- o The Model 700 Mountain Rifle project has been approved. 4
- o The Sportsman 78 in 243 and 308 calibers has been transmitted to Production. 4
- o New bolt action rifle prototypes will be evaluated in December. 5
- o The Model 700 Ducks Unlimited offering has been transmitted to Production. 5

Shotgun Development

Model 1100 Functional Improvements

The Model 1100 is the most popular autoloading shotgun ever built. Since its introduction in 1963, over three million guns have been sold. This program is aimed at maintaining the Model 1100's position in the marketplace until its replacement by the New Concept Shotgun. Improvements have been concentrated in the areas of gas system design, action smoothness, feeding, and component endurance life.

Initial testing of both the friction break and elastomer seal options for an automatically compensating gas system were favorable. Sensitivity tests, to measure the effects of lubrication, heat, powder residue, and wear, indicate that further development of both designs is required. *A leaf spring valve reacting concept is in the model shop and testing will begin in October* If a manually compensating gas system remains a backup alternative, initial testing of a reversible piston looks very good.

Areas of the fire control, action bar, and locking system are being investigated to improve action smoothness. The energy spike noted when the locking block disengages can be significantly reduced by changing the camming of the locking block on the barrel extension. The economic feasibility of doing this is being investigated. Changes to the disconnect camming angle significantly reduces the energy needed to cam this component. Other changes to the action bar such as plating, and reducing the bearing surface, do not seem to cause much change. Changes to the hammer spring force cannot be made because insufficient firing pin indents result. Changes to the hammer contour do not result in significant improvements.

Revised carriers to improve feeding should be received from the stamping vendor by the end of September.

Model 1100 Restyle

The cosmetic changes in this program are designed to complement the functional improvements being made to the Model 1100. Specifications include cut checkering, 30-gloss wood finish, a two-piece butt plate, screw machine magazine cap, and choke tubes. Introduction of 12 gauge specifications is scheduled for 1986.

Shotgun Development

Model 1100 Restyle - cont'd.

Revised specifications and a parts list will be supplied to Production this month to begin project economics.

New Concept Shotgun

The Model 1100 was introduced in 1963 and immediately became the industry standard for autoloading shotguns. However, few significant changes have been made since then, while competition has blunted our technological advantage. This program, which is designed to replace the Model 1100, will re-establish Remington as the innovator and technical leader in autoloading shotguns.

An engineering review of state-of-the-art autoloading shotguns has been completed.

Creative problem solving
A brainstorming session was held at Remington Farms on September 10 and 11 to generate ideas for new technology that may fit into this program. Members of Remington Research and the Du Pont Engineering Department participated.

Selected
The Research Plan will be issued by the end of September.

Choke Tube Development

Choke tubes offer customers the ability to interchange chokes in the field to meet varying shooting opportunities. Introduction of Remington choke tubes is scheduled for mid-year 1985, in the Model 870 Restyle.

Design of the Remington choke tube system is complete and has been transmitted to Production. Pattern testing was acceptable.

Model 870 Restyle

This cosmetic program is designed to keep the Model 870 competitive. Changes to the current model include choke tubes, a new recoil pad, 30-gloss wood finish, an ivory bead front sight, and cut checkering. Introduction of the 12 gauge is now scheduled for mid-year 1985.

Shotgun Development

Model 870 Restyle - cont'd.

The specification changes made in late August require new economics. A drawings package and parts list are being prepared.

Sportsman 12 Auto

The Sportsman series of shotguns and rifles focuses on the economy market. Functionally, these guns are comparable to our regular line, but the metal and wood finishes have been reduced. The Sportsman 12 Auto is scheduled for introduction in 1985.

Research has approved Production's trial and pilot sample, and released Production to put product in the warehouse.

Model 1100 Special Field - Ducks Unlimited

A dinner gun is being offered to Ducks Unlimited which will be the Model 1100 Special Field (12 ga.) plus B-grade wood, a game scene etched on the receiver side panel, and a 26" barrel with Briley choke tubes.

Drawings have been transmitted to Production.

Rifle Development

Model 700 Mountain Rifle

Scheduled for 1986 introduction, the Mountain Rifle will address the higher end of the bolt action rifle line and replace the Model 700 Classic.

The project has been approved, and a Process Engineering master schedule has been developed. N/C Shop fabrication of the stock former is continuing in an effort to meet the trial and pilot schedule.

Sportsman 78 - 243 and 308 Calibers

With the addition of these two short-action calibers in 1985, the Sportsman 78 will offer a more complete line to the cost conscious shooter.

Rifle Development

Sportsman 78 - 243 and 308 Calibers - cont'd.

The parts list and drawings package have been transmitted to Production.

New Bolt Action Rifle

A new bolt action rifle is being developed as a potential replacement for the Model 700, possibly in 1988. Technical improvements over the Model 700 include enhanced safety, reduced locktime, a claw-type extractor, and an independent bolt lock.

Engineering prototypes are being built for evaluation in December. Computervision modeling of components is being done on a safety-critical priority basis.

Model 700 Ducks Unlimited

For 1985, Remington will produce a special, limited production Ducks Unlimited dinner rifle. Since the variations from the standard Model 700 entail only cosmetic changes, the total Research involvement will be limited to the transmittal and trial and pilot evaluation.

The parts list and drawings package have been transmitted to Production.

JWB:sps