

CONFIDENTIAL

xc: R.E. Fielitz
W.H. Coleman, II
J.W. Bower
E.O. Fini
J.C. Hutton
C.E. Ritchie
J.R. Snedeker
W.L. Tomek

File

Remington Arms Company, Inc.

New Products Research

Monthly Progress Report - April, 1985

Firearms Research

Shotgun Development

Model 1100 Functional Improvements (1987 Introduction)

High-speed movies of the pressure-vent gas system showed chaotic spring movement during operation, even though bolt velocity spreads were at project goals. The gas system has been redesigned to better control spring movement. The new design has a reduced radius gas cylinder, a dog-leg type spring with valves permanently attached to the gas cylinder, and a retainer with movement limiting tabs and gas vents. Model Shop prototypes are being fabricated. Testing will begin the first week of May.

Testing of development guns with the other Model 1100 functional improvement items is on hold at 2,000 rounds per gun pending analysis of the test data. The two-piece firing pin retract spring and wider extractor are performing very well. Data on the revised carrier is still being analyzed.

Model 870 Restyle (12 Ga. Introduction-1986; 20, 28, 410 Ga.-1987)

At a vendor's request, choke tubes made from 16-6 stainless tubing were built in the Model Shop and tested. No problems were encountered, and the model drawing has been changed to show this as an alternate material.

Model 1100 Restyle (12 Ga. Introduction-1986; 20, 28, 410 Ga.-1987)

The 12 gauge parts list and drawings are complete. Transmittal can take place as soon as economics are approved by the Business Team.

The drawings package for the 20, 28, and 410 gauges is 80% complete. New fore-ends for the LT-20 detent system have been received from Production. Additional detent and barrel components will be completed in the Model Shop in May.

Model 870 Functional Improvements (1987 Introduction)

The proposed ejector performed well in field function tests and is now in endurance testing. Two Delrin and four steel ejectors have been shot 19,725 total rounds with no parts breakages or malfunctions.

New Concept Shotgun

PDS has demonstrated a sear release fire control with a programmed safety. They also reviewed a proposed design of a direct-firing fire control which eliminates the need for a sear and hammer.

A meeting is scheduled for May 8 in Ilion to discuss applications for synthetic and composite materials. Attending will be representatives from Remington, PPD, Textile Fibers, and F & FP.

Parker Shotgun

Layouts of the Model 3200 fire control with the Parker frame are about 80% complete. Contract design houses are being contacted to complete the engineering and design work.

Rifle Development

New Bolt Action Rifle (1988 Introduction)

The first phase of developmental jar-off testing is complete. With the trigger set to the minimum pull weight, the gun jarred-off at 10 inches versus the SAAMI specification of 12 inches and our design goal of 18 inches. Analysis of the test data, and the design, has indicated what is needed in the second generation design to fulfill performance requirements. A layout and CV mass properties study of the trigger is in progress.

Since initial drop test results did not meet program goals, a contingency design is being worked on. This design uses the basic Model 700 fire control, but adds desirable features such as an independent bolt lock, tang mounted safety, and a customer adjustable trigger pull weight to a safe lower limit.

Model 700 Classic .350 Rem. Mag. (1985 Introduction)

The trial and pilot sample of Production guns has been tested for accuracy and function with acceptable results. Visual inspection is held pending receipt of rifles with the longer stock reinforcement screws.

Ammunition Research

Shotshell Products

"Premier"

- o 12 Ga. 3" 1-7/8 oz.

All R&D handload development and production experimental loadings are complete and the comprehensive test results were acceptable. The technical data package has been transmitted to Process Engineering.

The trial and pilot run is scheduled for 6A/85.

- o 12 Ga. 3" 1-5/8 oz.

All R&D handload development is complete and the comprehensive test results were acceptable. The technical data package is being prepared. The experimental machine loading is scheduled 4B/85.

- o 20 Ga. 3" 1-1/4 oz.

All R&D handload development is complete and the comprehensive test results were acceptable. The technical data package has been transmitted to Process Engineering. The experimental machine loading is in progress.

- o Shot Weight Control

ERD has completed a study of the current shot charging process and developed alternatives to improve variability of large shot sizes. Process Engineering is reviewing these recommendations.

Steel

- o 12 Ga. 3" 1-1/4 oz.

Screening tests have identified several acceptable powders. In an effort to expedite development, product was run on the loading machine based on the handload developed by Process Engineering which uses a new Remington primer. This product is being evaluated at Ilion and Lonoke. R&D development will continue through the designed experiment using a Federal 209 primer as an alternate load.

Buck

- o 12 Ga. 3" 000, 00, 1 & 4 BK

Handload screening tests at room temperature have identified powders for the 00, 000 & 1 buck loads. Additional screening is in progress to confirm these loads in over night environmental testing.

Wad Improvements

- o Linear Low Density Polyethylene Wads (LLDPE)

LLDPE wads have demonstrated a significant performance improvement at -20F and will be incorporated in the lead shotshell product line beginning with the magnum loads.

- o Design Consolidation

A one piece buck shot wad design concept has been developed to replace the existing two piece design (over powder and filler wads). This concept uses an existing SP12 compression section without the shot container and could be run on existing molds with minor tool modifications. Prototype samples will be evaluated for feasibility.

Remington Target Loads

- o Figure 8 Wad

Factory wad tooling for one cavity of our existing "RXP" molds has been fabricated and will be at Olsey & Whitney 4B/85. Component wad tooling for one cavity is expected to be complete and ready for testing 5A/85.

Centerfire Products

"Premier" Centerfire

A project to modify and install a bullet assembly machine at the Ilion R&D facility has been prepared and is waiting approval pending review by the Business Team.


WHColeman, II:sps

Research Department

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April, 1985

RESEARCH PERSONNEL AS OF APRIL 30, 1985

FIREARMS

Exempt 24

Non/Exempt 12

Wage Roll 16

Bauman, Thomas G.
Bower, James W.
Calkins, Kevin L.
Coleman, Wm., H., II
Curry, Wm.
Douglas, Terry C.
Findlay, David S.
Franz, Scott R.
Hand, Charles J.
Hennings, James H.
Hugick, Adam H.
Hutton, James C.
Lawrence, Jeffrey A.
Martin, Fred E.
Murphy, Randall S.
Nightingale, Richard E.
Plunkett, Thomas J.
Powers, Thomas P.
Rankins, Edwin D.
Rowlands, Kenneth C.
Sanzo, Robert J.
Saunders, Eugene L.
Smith, Floyd H.
Snedeker, James R.

Eskoff, Sophie S.
Frost, Helen B.
Jones, Raymond A.
Martin, James S., Jr.
Pickett, Wm. A.
Saunders, Susan P.
Schuster, Joyce M.
Smithson, Ronald L.
Stephens, Charles J.
Supry, Fred L.
Urtz, Donald J.
Weaver, Harold E.

Baggetta, Joseph A.
Beader, Robert W.
Bedworth, Gary R.
Butler, Richard G.
Fiorentino, Dominick
Harter, James D.
Howe, Robert W.
Jennings, Dale E.
Kozakowski, Robert J.
Paslak, Wm., A.
Sohns, Wm, A.
Storne, Ramon
Truax, Irving E., Jr.
Williams, Clifford
Williams, Donald
Williams, Ronald

Total Firearms Personnel - 52

AMMUNITION

Exempt 4

Non/Exempt 2

Wage Roll 2

Cole, Wm. T.
desJardins, C.F., Jr.
McDonald, Alexander D.
Tomek, Warren L.

Conant, Paul
Thomas, Dennis

Dunn, Timothy
Selan, Jerry

Total Ammunition Personnel - 8

REMINGTON PERSONNEL

Remington Roll

Actual
4/30/85

Exempt

Ammunition Research	4
Firearms Research	24
Firearms Modernization	8
Administration	<u>1</u>
Total Exempt	37

Non/Exempt

Ammunition Research	2
Firearms Research	12
Firearms Modernization	1
Administration	<u>1</u>
Total Non/Exempt	16

Wage Roll

Ammunition Research	2
Firearms Research	16
Firearms Modernization	<u>1</u>
Total Wage Roll	19

Total Research	72
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