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ILION RESEARCH DIVISION
PROGRESS REPORT - HIGHLIGHTS
FEBRUARY 1983

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Remington Arms Company, Inc.

NEW PRODUCT DEVELOPMENT

Model 1100 Special Shotguns

Research has completed the necessary models and transmittals to satisfy the needs of Production and Marketing. The Model 1100 20 Gauge Special Field stock will be completed by March 15, 1983.

Model Eighty-Seven Pump Shotgun

This gun will be an upgrade of the Model 870 pump action shotgun. Styling changes to the outside appearance will be made. Mechanical changes will include a new barrel (Model 1100 long extension), new stock (Model 1100 contour), and a new fore-end design. The sight line will be the same as the Model 1100, which will add commonality. Specifications include 12 Gauge only, 3" chamber only, with cut checkering.

Prototype guns are now being produced to illustrate design specifications. Prototypes will be ready for evaluation by mid-March.

Model Eighty-Seven Special Field Shotgun

One model gun has been completed for evaluation with the short (Model 870) barrel extension. New guns are being made with the Model Eighty-Seven design specifications. Model drawings for a cost evaluation will be ready by the end of March.

Model 870 Riot Shotgun

Model drawings have been turned over to Process Engineering for cost evaluation. One gun has been endurance tested to 9,600 rounds and is still functioning satisfactorily. Twelve (12) guns have been field

tested a total of 116 rounds each intentionally tripping each shell to simulate the jam condition. There were no jam related malfunctions.

Future testing will include a three (3) gun endurance test to at least 10,000 rounds each. Every 1,000 rounds a 25 round test of the jam condition will be tried.

Model 7400 .223 Caliber Carbine

Four (4) prototype Model 7400's in .223 caliber were completed for Marketing evaluation. Twenty (20) guns are now being assembled for Design Verification testing.

Engineering drawings have been provided to Production for economic evaluation. If approved, complete drawings are available to transmit.

Bolt Action Rifle

A new bolt action rifle to replace the Model 700 Classic is being developed. It will be designated the Model 700 LIGHTWEIGHT. Design specifications have been reviewed and a model will be available by April 1.

Work is continuing on the replacement for the Model 700 BDL. A prototype with octagonal receiver will be completed in April.

Parker Shotgun

Arrangements are proceeding to complete one (1) VH Grade 12 Gauge Parker. Research is working on sections (fitting fore-end iron, triggers, etc.) to accelerate the completion date. It is now planned to have this model completed by May 1983.

CURRENT PRODUCT DEVELOPMENT

Model 870 12 Gauge Mag. 18" Full Choke Police Shotgun

Point of impact testing was satisfactory on barrels with the new design sight base. Parts list and drawings have been sent to Process for cost estimating.

Model Seven Lightweight

- 308 Caliber Rifle

Production has encountered premature releasing of floor plate covers. An investigation into the cause is being made.

- Aluminum Floor Plate and Trigger Guard Assembly

Three (3) engineering samples have passed preliminary tests. Ten (10) more assemblies will be ready for extended testing in March.

- 222 Caliber No-Bind Stamped Followers

Prototype followers gave a 2% malfunction rate in shoulder shooting, a larger quantity has been received for extended testing with new design magazine springs to eliminate stem malfunctions.

- 223 Caliber for 1984 Introduction

Ten (10) rifles are ready for Test Lab function and accuracy testing.

Model 700 ADL Restyle

- 222 Caliber No Bind Stamped Followers

A high percentage of overrides were found during preliminary testing. A larger quantity of followers has been received to test with a new design magazine spring to eliminate stems and overrides.

- Master Stock

A handmade master stock has been completed and is being digitized for model drawing dimensions.

Model 870 Limited Edition

An order has been placed for etched receivers with altered artwork.

MATERIALS AND PROCESS DEVELOPMENT

Injection Molding Metal and Ceramic Components

The Model 700 magazine follower mold has been altered to reduce warpage in the sintered part. Additional samples are being processed.

Samples of Parmatech, Witec, and Remington 316L stainless will be processed in March. Recent sintering experiments with 316L, which include an oxidation step, indicate that corrosion resistance is somewhat better than earlier runs.

Cut Checkering Machine Development

A purchase requisition is being prepared for a Bostomatic four-spindle CNC machine. Initial development was to concentrate on Model Four and Model Six stocks. This is being reviewed in light of recent discussions regarding 1984 new product introductions.

Form-Rolling

An Appropriation Request to purchase form-rolling equipment has been returned for further consideration. Development work will continue at Rol-Flo Engineering, Inc.

Wear Resistant P/M Alloys

Chrysler has requested a wear resistant material for an insert in

an automobile application. 410 stainless steel powder has been modified with additions of Mo, Ni, P, and C. Samples will be available for Chrysler by February 25.

Various fractions of WC and TiC have been added to HD-1000 and HD-2108 to see the effect on wear resistance and mechanical properties. Mechanical properties of samples containing greater than 10% WC or TiC were poor. At lower values of WC, properties were better.

Testing and Inspection

EPL personnel visited Ilion in February to review our processes. They should complete their initial report in March.