

LIMITED DISTRIBUTION

ILION RESEARCH DIVISION
PROGRESS REPORT - HIGHLIGHTS
JULY 1983

Distribution List

R. E. Fielitz	D. S. Findlay
W. H. Coleman, II	J. C. Hutton
R. L. Hall	J. S. Martin
<u>C. B. Workman</u>	C. E. Ritchie
J. W. Bower	R. J. Sanzo
J. W. Brooks	R. L. Sassone

Remington Arms Company, Inc.

NEW PRODUCT DEVELOPMENT

(J. S. Martin)

Model 1100 Special Shotgun

(D. S. Findlay, T. P. Powers)

Research effort on prevention of cracking in the M/1100 Special fore-ends has been concentrated on two primary designs.

Both designs utilize a new detent system retained in the magazine tube. Plastic molds for this system have been received. These prototype molds can be used to support production through the end of this year. Parts from these molds are in test.

The first design is a buffered fore-end having an elastomer sleeve retained in the fore-end. Sample molded parts have been received and five samples are in test at this time.

<u>Gun</u>	<u>Total Rounds</u>	<u>Mag.</u>	<u>Express</u>	<u>Light Field</u>	<u>Results</u>
1	2500	250	1750	500	Still in test
2	2100	210	1470	420	Still in test
3	2875	287	2013	575	Still in test
4	1150	115	805	230	Still in test
5	1400	140	980	280	Still in test

The second contingency design utilizes an extension on the magazine cap which separates the fore-end from the internal loads caused by the barrel. Parts for this system are in test.

Currently, all five test samples have been shot 5,000 rounds utilizing 10% Mag., 20% Light Field, and 70% Express loads. All fore-ends passed this test with no cracks. The test is being continued with 100% Magnums and at this time:

<u>Gun</u>	<u>Total Rounds</u>	<u>Mag.</u>	<u>Express</u>	<u>Light Field</u>	<u>Results</u>
1	6125	1725	3500	1000	Broken action bar
2	10,000	5500	3500	1000	Still in test
3	8275	3775	3500	1000	Broken action bar
4	7790	3290	3500	1000	Still in test
5	9260	4760	3500	1000	Broken action bar

Components for fifty (50) samples of this design have been started to perform a statistical analysis of the fore-end strain and to achieve a higher confidence level with this design.

Model 870 Special Field

(D. S. Findlay, F. H. Smith)

All drawings have been transmitted to the Plant. The samples (5 - 12 Ga., 5 - 12-20) have been started for catalog pictures and Marketing evaluation. These should be ready by July 29th.

Model 870 Restyle

(D. S. Findlay, K. L. Calkins)

A partial drawing package and a completed parts list have been handed to Process for them to start work on the cost and capital estimates. A completed drawing package will be ready by August 15th.

Parts for test guns and for Marketing samples have been initiated and will be completed by August 5th. Testing of these samples will be completed by August 30th.

New Autoloading Shotgun

(D. S. Findlay, J. L. Kast)

This shotgun is tentatively scheduled to replace the Model 1100 in 1987. Objectives include improved strength, lighter weight, and new styling features. One prototype is in endurance test. Four additional samples will be assembled for Design Verification testing pending results of the test on the first sample. Design specifications are being reviewed to insure compatibility with our long range product development strategy.

Model 870/1100 Deer Gun

(D. S. Findlay, A. A. Hugick,
F. H. Smith)

Introduction in 1985 of a new deer barrel to replace the current offering has been initiated. This redesigned barrel in both models and in both 12 and 20 Gauge will feature a 21" barrel length and a rear sight base capable of mounting a long eye relief scope with a variety of mounts. Drawings have been started for estimating by Production and samples will be completed by August 15th.

Model 870P Riot Shotgun

(A. A. Hugick)

The three anti-jam design endurance test shotguns are at the 12,400; 13,300; and 13,600 round levels with endurance continuing. Design investigation is continuing regarding shotgun disassembly without the additional tool now required. A meeting with the F.B.I. is planned to firm up and agree on requirements to meet their standards.

Parker Double Barrel Shotgun

(D. S. Findlay)

Reintroduction of the classic Parker side-by-side double barrel shotgun is being considered. Arrangements are proceeding to complete one VH Grade 12 Gauge Parker by August 15, 1983.

A partial set of drawings from Jesse Briley on a 20 Gauge Parker has been received. These drawings are undergoing engineering evaluation. Once the remaining drawings of the package have been received, they will be sent out for cost estimating by Process Engineering.

Model 700 Lightweight

(F. E. Martin)

Work on the Model 700 Lightweight transmittal is 65% complete. Date for completion is August 15, 1983. Initial accuracy testing will start July 25, 1983. Prototype stocks are being made and will be available for additional testing August 20, 1983.

Drawings for the Model 700 BDL Replacement have been released to PE&C for a preliminary cost analysis.

Model 7400/7600 Centerfire Rifles

(R. S. Murphy, A. R. Eddy)

The Model 7400 .223 Carbine project has been discontinued. 7mm-08 and .25-06 testing has been completed and drawings need to be updated for transmittal when needed. The .308 caliber carbine testing has been delayed due to other development schedule priorities.

CURRENT PRODUCT DEVELOPMENT

(J. W. Brooks)

Model Seven Lightweight Rifles

(D. E. Bullis)

With the decision to go to an aluminum floor plate and trigger guard casting, drawings are being completed to be sent to a vendor by the first week of August. He will visit the plant the middle of August to discuss dimensioning if changes are required.

Preliminary testing of ten prototypes to over 2,000 rounds was satisfactory. Some dimensional changes were required and new prototypes are being built. They will be complete by September. A sensitivity and function test of the modified design will be run at that time.

Low Price Model 870 12 Ga. (1984 Introduction) (T. J. Plunkett)

This model will consist of birch wood with new finish, no checkering, and reduced metal finish with other minor changes.

Process Engineering will have information to Research by July 29th so that a parts list and new drawings can be completed for transmittal to Production.

Low Price Model 700 (1984 Introduction) (T. J. Plunkett)

This model will be in long action only with .243, .270, and 30-06 calibers and reduced metal finish. The stock will be birch wood with new finish, no checkering, no floor plate or cheek piece. Models in .243 caliber are being built to test feeding.

Process Engineering will have information to Research by July 29th so that a parts list and new drawings can be completed for transmittal to Production.

Model 1100/870 Waterfowl (P. Nasypany)

Five models will be completed by September for function testing.

Model XP-100 in .223 Caliber (T. J. Plunkett)

Prototypes will be completed in September for testing.

MATERIALS AND PROCESS DEVELOPMENT (J. W. Bower)

Injection Molding Firearms Components (K. C. Rowlands, M. J. Topolski)

Pilot quantities of Model 700 magazine followers are complete through sinter and are ready for coining. Followers should be ready for finish and endurance testing the first half of August.

Injection Molding Commercial Applications (K. C. Rowlands, B. Panagian, M. Tasovac, J. A. Lawrence)

The mold for the West Co. part has been returned to the mold vendor to correct the shrinkage and gating.

An order has been received from AMP, Inc. for 10,000 injection molded crimping anvils. Delivery is anticipated in January.

With the assistance of CRD and EDL, we have agreed to supply injection molded PZT (lead zirconia titanate) to Sandia National Laboratories. Sandia will supply the powder.

Cut Checkering Machine Development

(R. J. Balaska, A. M. Makowski,
E. R. Owens, B. Panagian)

The Bostomatic CNC Machine for checkering pressed wood was successfully run off at the vendor and has been received in Ilion. Installation in Building 72-1 is scheduled for the week of July 25th.

Purchasing is finalizing the details of the order for a CO.RE.MA. Machine for checkering sanded wood.

CO.RE.MA. has also supplied samples of cut checkered Model 581 stocks showing a slightly different machine. This may open up alternatives to the present N/C machines for long stocks.

Process Research Laboratory

Renovations are nearly complete to convert Building 72-1 into a Process Research Laboratory. In addition to the Bostomatic and CO.RE.MA. Checkering Machines, several other pieces of equipment will be installed in this area:

- A 22 caliber shooting butt for development of automatic gallery testing
- An automatic visual parts inspection system (on loan from ETL)
- A prototype machine for automatic wood sanding.

Testing and Inspection

(J. A. Lawrence, A. M. Makowski,
B. Panagian)

EPL has supplied a Work Request for initial development of a universal parts inspection system.