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Remington Arms Company, Inc.
Research and Development - Firearms
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<u>Highlights</u>	<u>Page</u>
● Research has approved the LT-20 Trial and Pilot and is evaluating several design alternatives for the 12 Ga. Special.	3
● All drawings and the 870 Special have been transmitted and samples for Marketing are being prepared.	3
● Samples and drawings for an estimate on the 870 Restyle have been started and will be completed by July 30.	4
● Two (2) M/111 samples are in test and have a combined total of 15,000 Magnum rounds shot on them.	4
● Drawing work has been initiated on a new design deer barrel for the M/1100 and M/870 12 and 20 Ga. guns.	4
● Initial drawings have been received and are being evaluated on a 20 Ga. Parker shotgun.	5
● Model 870 12 Ga. Riot Shotgun testing is continuing without any apparent problems. Engineering drawings have been turned over to Production for estimating.	5
● Marketing and Research have reviewed both Model 700 Lightweight prototypes submitted. A model has been selected and preparation of a transmittal package including new drawings and parts list has been initiated for a planned August 1, 1983 release to Production. Testing will start July 1, 1983 on 36 prototype .30-06, .270, and .280 caliber rifles.	5

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- The Model 7400 .223 carbine project has been discontinued. All technical data will be recorded for future reference. Model 7400 7mm-08 and .25-06 work and testing has been completed and drawings need only be updated for transmittal. The .308 caliber carbine testing has been delayed due to other priorities. Other calibers being considered for Research evaluation are the .257 Roberts, .250-3000 Savage, 7mm Mauser, and the .35 Rem.

Model 1100 Special Field Shotgun

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

Research has completed testing for the LT-20 Specials and has accepted Production's Trial and Pilot. Eleven (11) Trial and Pilot guns were endurance tested. Seven (7) fore-ends were tested to 5,000 rounds. Three (3) were taken to 20,000 rounds. One (1) fore-end cracked at 3,250 rounds at the 10 o'clock position.

Research effort on prevention of cracking in the 12 Ga. 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 ordered. Scheduled date for this design is July 15, 1983. The prototype molds can be used to support Production through the end of this year.

The first design is a buffered fore-end having an elastomer sleeve retained in the fore-end. Sample molded parts are expected by July 3.

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 will be ready for test June 22, 1983.

Three back up designs are being worked on:

- Epoxy impregnation of the wood
 - Samples ready for test July 1, 1983
- Black plastic fore-end tip
 - Samples ready for test June 22, 1983
- A double buffer system and a plastic fore-end liner
 - Samples ready for test June 30, 1983

Model 870 Special Field

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

The Model 870 Special Field for introduction in 1984 is being developed to complement the M/1100 Special with the same appearance and performance features (i.e., 21" barrel, slimmed down and shortened fore-end, straight English stock, and cut checkering).

Design acceptance testing has been completed and all drawings have been transmitted to the Plant. Parts for 5 - 12 Ga. Special and 5 - LTWT 20's have been started for Marketing samples and catalog pictures.

Model 870 Restyle

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

The Model 870 Restyle is being developed to replace the current Model 870 in 1985. Specifications include 12 only, 3" chamber only, new fore-end design, matted top and bottom receiver radii, and medium gloss wood finish with cut checkering.

Drawings and samples for test have been initiated and will be completed by July 31. Testing to be completed by August 30.

Model 111 Autoloading Shotgun

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

A new autoloading and slide action shotgun is being developed as a potential replacement for the Model 1100's and Model 870's respectively. Objectives include decreased weight, increased reliability, and reduced manufacturing costs.

The design currently being developed involves the use of a new, patently novel locking system, (rocker arm), improved barrel contour, threaded in stainless steel magazine tube, orifice selector/choke tubes, and improved carrier latch system. Two (2) samples are in test and have been shot 15,000 rounds total. Nine (9) styling samples have been completed which depict options for stock and fore-end design, checkering pattern, and receiver/vent rib contours.

The projected minimum capital investment required to implement the 12 Ga. autoloading design into Production is approximately \$3.5MM. That total included approximately \$1MM each for implementation of a new locking system, a new receiver design, and cut checkering, plus \$500M in miscellaneous items. With successful implementation of Firearms Modernization programs now in development, that investment can be reduced to less than \$2MM.

A design alternative being considered includes the use of an aluminum receiver which would provide further weight reduction by approximately one pound compared to the current steel receiver design. Prototypes with aluminum receivers have performed satisfactorily for up to 10,000 Magnum rounds with no significant damage to the receiver.

Model 870/1100 Deer Barrel

(D. S. Findlay, 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 Ga. 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. Samples will be completed by August 15.

Parker Double Barrel Shotgun

(D. S. Findlay)

Reintroduction of the classic Parker side-by-side barrel shotgun is being considered. Arrangements are proceeding to complete one (1) VH Grade 12 Gauge Parker by May 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 870 Police Shotgun

(A. A. Hugick, T. G. Bauman)

Two (2) Model 870 12 Ga. Riot Shotguns have been endurance tested to 7,500 rounds and one (1) endurance tested to 5,500 rounds using 3 inch Magnums and 2-3/4 inch high base ammunition. At the end of each 1,000 rounds, 25 rounds are fired testing the jam condition.

There has been no apparent problems with the anti-jam design feature components and the guns will be continued to 20,000 rounds per gun endurance level. Estimated test completion date is August 1, 1983.

Engineering drawings have been turned over to Production for estimating.

Upon endurance completion and approval, finished model drawings will have to be prepared for Production and then transmitted to Production. Also a new M/870 Police gun catalog or supplement will have to be prepared and supplied.

Bolt Action Rifle Development

(F. E. Martin)

The replacement rifle for the Model 700 Classic has been accepted by Research and Marketing. It features a lengthened M/7 barrel, no sights, a new checkering pattern, and a Bob Emmons stock design. Parts list and drawings are being prepared to meet the transmittal date of August 1, 1983. Warehouse date of this rifle is planned for November 1984.

Work on the BDL Replacement will continue on completion of the above program. Testing of the proposed extractor change is planned to start in September with the completion of the prototypes. Work on the rotary magazine components is continuing. A test schedule will be determined with the completion of the magazine assembly. The magazine rotor, spring retainers, and end plate have been completed. The magazine box is expected by July 20, 1983.

Model 7400/7600 Centerfire Rifles

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

The Model 7400 and 7600 rifles were developed as replacements for the Model 742 and 760, respectively, and were introduced in 1981. The 7400 .223 carbine was being developed as a sporting version of that popular cartridge to augment this product line.

Due to cancellation of this project, efforts are being concentrated on collecting all technical data and design specifications and recording this information. For future reference, various prototypes will be completed and assigned to the Research Gun Library. An AI Report will follow.

All preliminary 7mm-08 and .25-06 work (orifice, pressure data) has been completed. A number of rifles in both calibers have been built and test fired satisfactorily. Drawings only would have to be updated for transmittal if this is desired. We are still waiting for a priority to get preliminary measurements on 10 standard .308 rifles. This is necessary before work can commence on data confirmation for the carbine length barrel.

One (1) .257 Roberts model has been built and orifice and pressure data is acceptable. This rifle has been field tested with very good results. Barrels are being readied so that additional models can be built to verify our results. Other calibers currently being considered for evaluation are the .250-3000 Savage, 7mm Mauser, and possibly the .35 Remington. Some barrels have been allotted for these calibers and efforts will be made to get orifice and pressure work done.

R. S. Murphy:ws
June 23, 1983