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## LIMITED DISTRIBUTION

REMINGTON ARMS COMPANY, INC.

NEW PRODUCTS RESEARCH

MONTHLY PROGRESS REPORT - JANUARY, 1984

### Distribution

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FIREARMS

New Product Development - Shotgun

Model 1100 Special Field Shotgun

Trial & Pilot samples of the elastomer buffer fore-end design are expected by January 27 from Production. Acceptance testing should be complete within three weeks after receipt of sample guns. Production to the warehouse is scheduled to begin in March.

Model 870 Special Field Shotgun

20 gauge Production Trial & Pilot samples are currently undergoing Test Lab evaluation, which should be complete by the end of January. 12 gauge Special Fields have already been approved. Warehouse deliveries are to begin in February.

Model 870 Restyle

The parts list and drawings package, reflecting the specifications agreed to at the December Operations Committee Meeting, have been transmitted to the Plant.

Model 870-1100 Deer Guns

Economics will be presented at the February Operations Committee Meeting. Drawings and parts lists are complete.

Model 870-1100 Waterfowl

Model guns for test and Marketing evaluation are complete. Testing of samples should be complete by the end of January.

Choke Tubes

Testing of Briley's tubes should be complete in mid-February. Approval is expected at the February Operations Committee Meeting. Remington designed tubes are scheduled to be tested by June, 1984, with project approval and transmittal scheduled for August.

## New Product Development - Rifles

### Model 700 Mountain Rifle

Prototype stocks have been completed, and 36 rifles built. All rifles will be shot for function and accuracy. Five will be enduranced to 1,000 rounds.

Favorable economics have been issued. Assuming approval to proceed by February 1, warehousing could begin by the end of November.

### New Bolt Action Rifle

Model guns in three different configurations should be ready for review with Marketing by the end of May. Receiver designs are being checked against Firearms Modernization's flexible machining system.

### Sportsman 74/76

Trial & Pilot is complete. Production to the warehouse is expected in April.

### Model Seven

Trial & Pilot samples, with aluminum floor-plate assemblies, are expected for design verification testing in March. Production to the warehouse is scheduled for June.

### Model 7400 Restyle

Model guns will be available for review with Marketing by the end of March. Functional deficiencies are being defined.

## Current Products

### Model 870P Riot Gun

Preliminary testing of the "flexi-tab" carrier shows this to be a satisfactory solution to the problem of shells feeding under the carrier and possibly jamming the action. Testing should be complete in late March.

### Sportsman 12

Dimensioning of the Sportsman 12 receiver has been changed at Production's request. An annual cost savings of \$10M will be realized as a result of less hand polishing.

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## AMMUNITION

### New Unibody Process

New Unibody 12 gauge 3" and 20 gauge 2-3/4" bodies are currently in Production. A Trial & Pilot run of 50,000 8 gauge has been completed with a low frequency of cap movement at 150°F. Assemble, head and prime tooling is being reviewed to increase head pull forces.

Hand assembled 12 gauge 2-3/4" bodies have passed all severe function and casualty tests in our effort to eliminate problems associated with earlier plant assemble, head and prime products. Tooling is ready for a plant machine demonstration in January.

Hand assembled 28 gauge 2-3/4" bodies produced by ARD have passed all severe function and casualty tests. Body former and assemble, head and prime tooling is ready for a machine demonstration in February.

### "Premier" Shotshell

"Premier" shotshell 12 gauge 3" 1-7/8 ounce and 20 gauge 2-3/4" 1-1/8 ounce loads have been held for high average pressure at room temperature. A decision has been made not to release it for shipment. The problem is apparently related to moisture and possibly nitroglycerin content of the powder. Hercules is providing new samples for evaluation in early February. Alternate powder sources are being investigated. All "Premier" magnum shotshell loads currently use this powder series and are being delayed until this problem is resolved.

"Premier" 12 gauge 3" SP thin wall bodies (hand assembled) have been evaluated as backup for the 12 gauge 3" large volume New Unibody. All product test results were acceptable. A cap bulge just above the base after severe casualty testing at -20°F has no effect on product integrity. The Technical Data package will be prepared in February.

### ABC Primer

An ABC four-flash hole primer eliminates battery cup distortion and failures. Tooling for this new progression and higher anvil point height have been fabricated. Test results are expected in February.

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### "Premier" Centerfire

"Premier" Centerfire secant ogive .30 cal. flat base tooling for the bullet assembly machine is expected in early February to confirm the good results using hand formed power curve ogive bullets. Boattail bullet hand form tooling is expected in March.

### 357 Rem Maximum

357 Rem Max 180 SJHP product released for shipment has been approved by Research. Forcing cone erosion and particularly spitting in revolvers is more pronounced than with the 357 magnum. This is an anticipated phenomenon. Olin is supplying sample powders for testing to determine if this can be reduced by a powder change.

### Centerfire Modernization

The recommended rifle product bullet assembly/jacket draw program for Centerfire Modernization was reviewed at the January Operations Committee Meeting.

The initial construction project for Centerfire Modernization may be submitted primarily as a cost reduction program without some or any of the Marketing sales increase credits originally projected. If economically acceptable, this plan could achieve first quarter '84 authorization.

Research will prepare a project addendum defining the probabilities of producing the new ogive bullets and boattails on projected project equipment and also attempting to quantify improvements which can be expected from "Premier" bullets made on modernization equipment.

Under an advance authorization of funds, ER&D is proceeding to complete equipment and change part drawings for the bullet assembly machine and jacket draw die set. Final equipment specifications are also in preparation. By early March, the bullet assembly machine drawings will be sufficiently complete to place purchase orders.

Following is the status of prototype machines:

- Single jacket draw - complete and in production.
  - Bullet assembly - being retrofitted with a PC control, in-line reject, and new wedge-type wire feed module.
- All new machines will feature these items.

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Centerfire Modernization - Cont'd.

- Header - although some equipment problems remain, no further work is planned at this time.
- Pistol Group - completed all changes. Equipment ready for turnover to Production.
- Loader - in production testing and evaluation. Results are looking good.
- Anneal/Taper/Anneal - completed all changes. Equipment is in testing. Results are looking good.

The Plant has taken the necessary action to capitalize the equipment. ER&D effort is essentially complete at this point.

Consolidation

The Consolidation Project was authorized and general area layouts have been approved. A contract was let for finalizing engineering drawings, which should be completed by mid-March.

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NEW PRODUCTS RESEARCH  
PERSONNEL

REMINGTON ROLL

	<u>Actual</u> <u>12/31/83</u>	<u>Actual</u> <u>1/31/84</u>	<u>Forecast</u> <u>12/31/84</u>
<u>Exempt</u>			
Ammunition Research	11	9	8
Firearms Research	<u>32</u>	<u>31</u>	<u>37</u>
Total Exempt	43	40	45
 <u>Nonexempt</u>			
Ammunition Research	12	12	6
Firearms Research	<u>9</u>	<u>10</u>	<u>12</u>
Total Nonexempt	21	22	18
 <u>Wage Roll</u>			
Firearms Research	<u>17</u>	<u>16</u>	<u>17</u>
Total Wage Roll	17	16	17
 <u>Total New Products</u>	<u>81</u>	<u>78</u>	<u>80</u>

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