

LIMITED DISTRIBUTION

REMINGTON ARMS COMPANY

RESEARCH DEPARTMENT

MONTHLY PROGRESS REPORT -- MAY, 1983

May 27, 1983

Distribution

<u>R. E. FIELITZ</u>	P. S. HEBERT
W. H. COLEMAN, II	P. A. LEWIS
P. F. CUNNINGHAM	E. REITTER
R. B. HARTMAN	L. R. SROKA

REMINGTON ARMS COMPANY

ARD MONTHLY PROGRESS REPORT - MAY, 1983

Rotary Cam

A 28 ga. experimental AH&P run was unsuccessful due to poor cap feeding of the shortened brass caps and insufficient heading pin clearances. The AH&P run is rescheduled for mid-June.

410 bore out-performed plant control in reloading tests; however, the shell wall will be thinned to increase volume and the taper will be lengthened to alleviate body buckling tendencies.

12 ga. large volume is reported under "Premier" Shotshell.

"Premier" Shotshell

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

5,000 plant assembled and loaded product using Semi-works large volume bodies with the new design basewad passed preliminary ballistics and function and casualty tests. Complete test results are expected by June 3. The Trial and Pilot run using Production bodies is on schedule (June). Body former and AH&P tooling is available.

12 Ga. 2-3/4" 1-1/2 oz.

The "Release to Ship" was signed by ARD. Operations approval to ship was received in May.

28 Ga. Brass Caps

The first experimental AH&P run was unsuccessful due to equipment and tooling problems. New cap feed rails are required for the shorter brass caps. The heading stem diameter is being reduced .007" to eliminate buckling. At the previous operation, half head, a new feed bowl for the shorter cap is needed. Plant Engineering has been requested to correct these problems prior to the next scheduled experimental run in mid-June.

1 oz. Target Load

Evaluation of several 1 oz. target load production samples controlled to 1200 fps indicated either marginal M1100 gun function or unacceptable muzzle flash. Testing of handloads confirmed

Research Department

- 1 -

May 1983

1 oz. Target Load (Cont'd.)

incompatibility of many powders for use in this load and also singled out Hercules Red Dot 20 powder as the best candidate for a new experimental production run. This loading is scheduled at Lonoke during the week of May 22. Laboratory and field testing will be completed by June 6, 1983.

Hercules and DuPont are continuing their efforts to develop an improved 1 oz. target load powder and samples from both companies are expected in early June.

Shotshell Primer Basics

Laboratory testing of experimental run primers with domed primer cups and quarter-hard anvils is complete. Primer performance has been excellent, at least equalling current Remington and competitive products in all aspects and exceeding them in sensitivity in both weak-spring gun and universal receiver angled off-center blow testing. Ballistic performance has been excellent.

Research field testing has begun and additional product has been produced for field testing by Marketing at shoots in Ohio and Michigan.

ABC Primer

Experimental tooling has just been received for adding a fourth hole to the battery cup and to attempt to eliminate the stress riser at the base of the anvil. This is an effort to reduce low frequency battery cup failures during firing. Primers were assembled with domed primer cups to evaluate their effect in improving piercing resistance and will be tested shortly.

TLX

An improvement to Shotshell target load ballistics performance was achieved by increasing the lead styphnate content and adding 2% aluminum. No breech flash resulted from this limited amount of aluminum. A Plant batch was made and additional testing will be conducted. Pellet processing continues to be somewhat more difficult than with present mixtures.

"Premier" Center Fire Ammunition

Experimental runs of approximately 5,000 rounds of each of the eight "Premier" cartridges were just conducted. Sierra bullets were grooved on a unit developed by Research which was installed on a duplex loader. This unit maintains good bullet appearance and eliminates point deformation by minimizing bullet

Research Department

- 2 -

May 1983

"Premier" Center Fire Ammunition (Cont'd.)

handling. Two machines were used for the experimental run and a gauging problem surfaced with some of the loads produced on one of the machines. Deformation of the case by bullet insertion station misalignment is suspected.

Ballistics and accuracy of most of the loads were excellent; however, more work remains to be done with three of the cartridges as velocity or pressure is slightly outside specification. Additional bullets have been ordered for the 270 Win and an additional run will be made to correct the gauging and ballistic deficiencies.

Orders for the Sierra bullets for the 1984 production requirements should be placed shortly to ensure that schedules be met.

Center Fire Modernization Committee

The CFM Committee met May 19th to discuss and evaluate the progress of our strategy plan. It was agreed that the high-spot comparison economic studies now underway be based on previously projected Prototype Project equipment efficiencies and near-full equipment capacity loads. These conditions will measure return levels under best-case conditions. Subsequently, modernization development programs showing IRR's below 35-40% may be discontinued.

The Marketing Department has issued an extended Center Fire forecast for use in the CFM economic evaluations. Total demand levels both with and without the improved aesthetic/performance features through 1990 indicate an average increase of 35mm/year due to expected product improvements.

WHC:mf 

Research Department

- 3 -

May 1983