

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE



"CONFINE YOUR LETTER TO ONE SUBJECT ONLY" _____

Ilion, New York
March 10, 1975

TO: W. E. LEEK
FROM: J. P. LINDE

STATUS OF DESIGN WORK

Model 3200

Costs and Standards

Since the first of January we have been actively supporting the Plant effort in reducing costs for the 3200 Shotgun. The major portion of our effort has been concentrated on clearly defining what we expect and establishing the correct assembly and testing techniques. The following areas are being concentrated on:

- Updating and revising assembly and inspection sheets
- Stock fit
- Fore end fit
- Correct top lock fit and adjustment
- Correct fore end adjustment
- Proper trigger adjustment

Product Improvement

1. Trigger Creep - A large number of guns are rejected for creepy trigger pulls. We have been investigating what makes a good trigger pull. A test device is being made so assembly can check the quality of the questionable triggers at final inspection to clearly defined standards. The factors which contribute to good trigger pulls are also being investigated. They are surface finishes, amount of engagement, and radius on sear and hammer. Presently we are recommending that the 3200 hammer notch be ground and the sear notch be ground.

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Product Improvement Continued

2. The following areas of interest will be investigated as soon as time permits:
 - A. Breech face deformation around firing pin holes on the 3" Magnum.
 - B. Stress mark on side of frame radius on some guns caused by proof round.
 - C. Fore end breakage - tied to fore end iron - fore end plate joint.
 - D. Top lock lever screw redesign.
 - E. Safety selector screw works loose.
 - F. Design of barrel straightening fixture.
 - G. Machine, to form bottom tang - frame junction tight.
 - H. Test of new tang and stamped strut design to reduce cost.

Product Safety

The following areas of design activity relate to the safety of the product:

1. The top lock blew off on two guns. Problem was isolated to the use of paper cases with double charge and bad base wad.
2. On one 3" Magnum the notch on the hammer showed severe wear on the hammer opposite to the one being fired.
3. Check the 3200 barrels to see if they will withstand the 12-20 combination.
4. Check the handloading presses to see if by normal loading techniques they can give high pressure loads. Endurance guns with handloads.
5. Finish the design work on the proposed field fix.

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32" Trap Guns

The 32" barrel assemblies are shooting close to the desired point of impact. If production cannot control putting on the proposed center spacer a new barrel band will have to be designed to give the desired point of impact for the bottom barrel. The first 160 barrel assemblies were shooting below what we would like, but above the center of the target. A deviation was written which will expire on April 1, 1975 to accept barrels to a lower specified standard. A deviation in the barrel process has been found which had an operation to bend the muzzles down on the trap barrels .010 of an inch. This has been corrected and a sample of two straight barrels were run with good point of impact results.

3" Field Magnums

A number of 3 inch Magnum barrel assemblies were made with the standard field rib altered to accept the enlarged steel shot muzzles. These barrels shot low, 3-5 inches below the center of the target. A new rib design was made which should have moved the point of impact up 4 inches. Four assemblies were made with this vent rib design. These barrels also shot low from the 3200 test device with 3 inch Magnum No. 4 lead shot loads. The barrel band has been brazed to the top barrel on three barrel assemblies, making the assembly much more rigid. This should make the barrel assemblies shoot higher. The three barrel assemblies were shot from the jack and the shoulder, and it was found that the top barrel shot high and the bottom barrel shot low. It was further determined this was partially caused by the barrels being bent. It was not determined what bent the barrels. The barrel bands are being removed from these barrel assemblies. The barrels will be straightened, rebrazed, and reshot to see what is bending the barrels, and if they are straight will they shoot right?

Competition Skeet and Trap Guns

Two more models have been made for Marketing approval. The main differences over previous models are that there are no cuts in the vent rib and the stock has the side panels checkered.

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3200 Skeet Sets

All of the design objectives for the skeet sets have been met. Three complete sets should be ready for design testing the week of March 17. The drawings have been transmitted to Production.

3200 LightWeight 12 and 20 Gauge

The drawings for the LightWeight models are in the Model Shop being fabricated. Two LightWeight 12 Gauge models, two LightWeight 20 Gauge models and one model with a 12 and 20 Gauge barrel assembly are being made. A design for a spring loaded ejection system also will be tried with this model.

Single Barrel Trap Gun

This is a complicated design and will require much attention. It is hoped to pick up the design again in March.

Model 3200 Hi Grades

We are working on two models which will be in the \$3,000 to \$6,000 range.

Model 788

The bolt handle has been redesigned to alleviate the bolt handle breakage. The redesign will be tested in the following manner:

Guns will be shot with high pressure handloads to determine maximum unlocking loads.

Samples of the redesign will be static loaded to failure and compared to present production.

Samples of the redesign will be drop test loaded and the results compared to present production.

Drawings have been made of the firing pin head and sent to a form bar stock vendor for quotes. The whole firing pin redesign will be reviewed from a design and cost standpoint.

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Model 700

The following items are being looked at for the bolt action rifle:

1. Investigation into present barrel accuracy problems
2. Three position safety
3. Wrought steel sear
4. Improved bolt plug and cocking indicator
5. Detachable box magazine
6. Investigate improved safety

Model 600

It has been found that the 600 can be made to fire when the gun safe is positioned half way between the safe and fire position, the trigger is pulled, and the safe is moved to the fire position. We are working to make the safe more positive; that is, it is either in the safe or fire position and cannot be in between. The safety cam is being checked to see if the safety can be kept engaged until the safety lever is almost to the fire position.

A design proposal is being made for the lightweight carbine in two grades. The first step is to obtain a cost estimate on the proposed models.

Model 40X RF Sporter

Design work is needed on this model to work out its feeding problems.

XP-100

Design work is needed on this model to make sure it will come up to the latest pistol standards as set forth by SAAMI.

Model 580

Marketing has requested we look into the possibility of dropping the 580 and offering a loading ramp with the 581 to take its place.

It would appear that we should redesign the stock on the 580 Series for the adult buyer.

The 580 Series fire controls would not work properly with the redesigned safety. The safety was redesigned to eliminate parts and works the same way as the 540X system. The safety lever could be positioned to the safe position, the trigger pulled, and when the safe is released the gun would fire. This condition was caused by the trigger being too long, and the holes out of position in the fire control housing. The design has been

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Model 580 Continued

reviewed and the lever has been redimensioned, Process is checking with Powder Metal on the trigger, and the gaging procedure on the housing is being reviewed.

Model 870 Trap Gun

This gun would have the same features as the single barrel 3200; i.e. it would have recoil reduction, adjustable rib and interchangeable chokes..

Mechanical Traps

Field Master

Excellent clay target trap with manual cocking by actuating the throwing arm and manual firing by pulling trigger handle. The trap will throw singles or doubles in a fixed flight path. Precision mechanism with oilite bronze bearings in all critical pivots, anti-backlash clutch, adjustable spring tension, precision throwing arm.

Target Skeet Master

All of the above features plus cocking handle for easy cocking, and solenoid or manual trigger mechanism. This excellent trap can be placed in a skeet house with excellent results, and fired remotely by using the solenoid.

Pro Master

This is a super fine model which is auto-angling and auto-elevating to give the serious shooter or the beginner a trap which is fun to shoot over. All features of above trap plus auto-cocking.

Skeet Trap

The design is pretty much complete except for work required on assembling more models.

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General Work

1. Investigate silhouette target rifle
2. Barrel vibrations study
3. Choke investigation
4. Point of impact study for shotguns
5. Accuracy investigation of rifles

Personal Development Programs

1. Trade shows
2. Major shoots
3. Design shows
4. Vendor tours and information

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Ilion Research Division