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RESEARCH PRESENTATION

I will describe the research product development programs in the following product areas: Bolt Action Centerfire Rifles, Target Shotguns, Rimfire Rifles, and Mechanical Traps.

RIMFIRE RIFLES

M/581 Single Shot Conversion

The objective of this design is to give the customer the option of converting his M/581 clip fed repeater to a single shot rifle which can be used to train new shooters. The rifle at some later date can be converted back to a repeater. This design is accomplished by supplying the customer with two molded plastic parts which readily convert the rifle to a single shot. The conversion unit will be offered to the market in January 1978.

CENTERFIRE BOLT ACTION RIFLES

Present Status

Remington is the leading producer of bolt action centerfire rifles with 46% of the market in 1976. Our production rate is presently limited by our manufacturing capacity, but we have a project approval to increase capacity. Our bolt action line is very vulnerable to competition because of the limited product differentiation between competitive models and the vast number of competitors. Presently our biggest competitors are Ruger with their M/77 and Winchester with the M/70.

The M/700 has gained wide acceptance for its appearance, performance and accuracy characteristics, but we must continue to update and improve this model with design improvements and new model variations to maintain our market position.

New Bolt Action Model Variations

M/700 Classic

There is a developing trend in the market for a more traditionally styled rifle. This shift in consumer attitudes is partly due to the influence of the gun writers' renewed interest in classical styled rifles. The increasing popularity of the Ruger M/77 with its more traditional stock design offers evidence of this market trend.

M/700 Classic Continued

The Remington M/700 Classic rifle has been developed so that we can offer the customer who wants a traditionally styled rifle, a Remington product.

The M/700 Classic is a rifle with uncluttered elegance. It features a traditional stock void of cheekpiece, Monte Carlo styled comb, and white line spacers. The grip radius has been swung back to complement the style of the stock. The tough satin finish will be used on the stock in keeping with the classic theme. The stock will be cut checkered with the same pattern as presently used on the M/700 BDL rifle. The BDL floor plate is included on the Classic Rifle to give the customer a rifle with improved appearance and also make the rifle easier to unload. The rifle will be offered with sling studs and swivels so any carrying strap can be readily adapted to the rifle.

M/700 BDL Rifle with Skip Line Checkering

The M/700 BDL with skip line checkering dresses up the model, while at the same time it gives a definite model distinction between the Classic and BDL checkering patterns.

M/600 Carbine

Marketing has requested that we revaluate our bolt action rifles with respect to adding a carbine to our line. We propose to facelift the M/600 rifle with new styling and a new image to satisfy the product requirements.

The objective of this development effort is to satisfy the needs of America's deer hunters for a hard hitting, light, short and fast handling rifle.

Design Objectives:

- Chamber for modern high performance cartridges
- Weight - 6 pounds
- Length - 35 inches

Rifle equipped with:

- Sling and Swivels
- Recoil pad
- Metal Trigger Guard

M/600 Carbine Continued

Design options to be investigated:

1. Styling of Stock
2. Bolt Handle design
3. Checkering
4. Wood Finish
5. Sights

Development Program:

Fabricate models with design objectives and options by November 1977.

Evaluation of Options with Completion in January 1978:

Research Testing
Marketing Analysis
Economics

Proposed Market Announcement:

January 1979.

Bolt Action Product Improvements

M/700-600 Fire Control Improvements

We presently offer these two rifles with a fully adjustable fire control which we tell the customer not to adjust because the typical customer does not understand the system well enough to adjust it properly. The adjustment features increase the cost of the fire controls. These rifles cannot be unloaded with the safety in the "On Safe" position, which we believe would be a desirable feature. To overcome these deficiencies, we are presently doing a design analysis of the M/700-600 fire controls. We are trying to develop a new fire control with the following features:

M/700-600 Fire Control Improvements Continued

1. Trigger externally adjustable for pounds pull within safe limits.

2. Sear engagement and trigger overtravel determined by design (not adjustable by customer).

3. Rifles can be unloaded with the safety in the "On Safe" position.

4. Improved trigger pull characteristics.

5. Reduction of trigger assembly costs.

Development Schedule:

- Prototypes with different design options available for inspection and testing - March 1978.
- Preferred model ready for extensive testing - July 1978
- Design complete - March 1979

TARGET SHOTGUNS

The 3200 All Gage Skeet Sets

The skeet sets will satisfy a market need for a good quality skeet system for the competitive skeet shooter. This program should also help to improve the financial position of the M3200 line.

The design and Research testing of the 3200 Skeet Sets was completed in July 1975. The Research testing was followed by a Marketing field test which verified the superior bird breaking ability of our skeet system. With this skeet shooting system the customer can shoot all four skeet events with the same gun rather than having to adapt to a new gun for each event.

The gun has a common weight, balance point, sight line and point of impact, for all 4 barrel assemblies. When the shooter shoots any gauge it is practice for any other gauge because he is shooting the same gun with the same feel with any of the 4 different barrel assemblies. The barrels have a unique contour which eliminates the need for spacers or separate fore ends for each barrel assembly, but also has a very pleasing side and top appearance.

The design is completed, tested and transmitted to Production. The Skeet Sets have a planned January 1979 market introduction.

M/870 Competition Trap Gun

With the limited volume of the Trap Gun market we cannot afford to develop and manufacture a new model designed specifically for trap shooting. What we need to meet our company's objectives of profit and market share is a Trap Gun with superior features based on an existing high volume shotgun.

The M/870 Trap Gun has less than 10% of the line count at the major shoots. In its life of 27 years it has never gained the reputation of being a sought after trap gun such as the M/12 Winchester. The M/870 lacks some of the handling qualities of the more popular trap guns such as the M/12 Winchester, Browning BT99 and Perazzi single barrel. The M/870 does have a proven record of dependability, performance and product value. We are working on a development program to capitalize on the M/870 strengths and to improve its bird breaking attributes.

The objective of the M/870 Competition Trap Gun program is to develop a superior shooting trap gun with proprietary features which will give us a competitive advantage in the marketplace.

The M/870 Competition Trap Gun could be offered with all or any combination of the following features:

- Recoil Reduction System:

  This system is placed in the magazine tube. The system is capable of shoulder force reduction equal to the M/1100.

- Adjustable Point of Impact

  The vent rib can be altered to give the shooter a 10-inch adjustment at 40 yards.

- Pattern Control:

  The gun could be offered with a choke tube system which would give the shooter a choice of two chokes for optimum pattern control.

Development Schedule:

Three prototype shotguns with combinations of the above listed features have been fabricated and are ready for Research testing.

The three prototypes will be tested extensively at shooting trap comparing the scores of the 870 Competition Trap gun to the leading trap guns. Design changes and alterations will be made which will improve the inherent bird breaking ability of this shotgun.

M/870 Competition Trap Gun Continued

The selection of design options, testing, Marketing evaluation and economics should be completed by September 1978.

The M/870 Competition will be announced January 1980.

M/3200 Single Barrel Trap Gun

At Marketing's request a model of the 3200 Trap Gun with a shortened and capped bottom barrel has been fabricated for their inspection. The development effort for the 32" barrel (as shown) is complete. If a 34" barrel is required this would necessitate additional research effort to insure the proper point of impact, and prepare the required parts list and drawings. The gun would have a tentative 1980 introduction.

RIMFIRE RIFLES

Of all our firearms product lines the rimfire rifles are in the worst shape from a cost, customer acceptance and market position. Our market share has dropped to 13% of the total rimfire market. A customer can purchase a Glenfield M60 with scope at a lower price than what it costs us to manufacture the M/552. The M/552 requires 313 operations to manufacture as compared with 316 operations for the M/700 and 210 for the Nylon 66. With the price-cost structure of the M/552 we are only appealing to the top 5 percent of the rimfire market.

At the present time the rimfire autoloading market is being dominated by the Marlin Glenfield 60, Ruger 10-22, and the Winchester M190. Fifty percent of the units sold in 1976 were priced under 61 dollars, which gives a good indication of the cost problem associated with rimfire rifle production.

Research has initiated a program to determine the long term options available to us in the 22 autoloading market. (Because of the complexity and magnitude of this development program it is being initiated with clearly defined check points and goals.) To be competitive in this tough market with a competitively priced rifle will require a major commitment from the company in the areas of produot design and process development.

Rimfire Rifles
Continued

Our first check point will be a development feasibility study to be presented in January 1978 after all the following considerations have been evaluated. This proposal will include our recommendation on the rimfire program. If positive, it will include our development schedule, development costs, and design objectives.

To develop a proposal we are approaching the problem from 5 different vantage points:

I. Marketing Input

Marketing has started supplying us information on the market structure, market shares, price-value relationships, appearance and functional considerations. Their analysis to date states we should be developing an adult oriented product with centerfire rifle styling. The rifle should be priced between 60 to 80 dollars and have at least a 10-shot magazine capacity.

II. Analysis of Competitive Rifles

All of the autoloading rimfire rifles in the market are being analyzed from an appearance, function, design and process cost viewpoint.

III. Firearms Cost Data

All of the existing 22 rimfire rifles manufactured by Remington are being cost analyzed to determine what the various elements of manufacturing contribute to the total gun cost. This cost data completed to date is pointing out where effort should be concentrated on a new design to reduce overall gun costs. The leading competitive models will be cost analyzed to determine if they have a cost advantage, and if they do, where it exists.

IV. Processing Data

To gain the proprietary position in design and manufacturing costs which we desire, the process development effort on this model will have to be greatly accelerated in the area of rimfire production. All new processes and process innovations will have to be investigated in the proposal stage of development so the parts can be designed to be fabricated by the most economical method.

V. Rifle Design

The design will have to be fully integrated with the process and market requirements to meet the cost and customer acceptance requirements.

MECHANICAL TRAPS

The objective of this development program was to design two new traps to replace the outdated Blue Rock and Wonder Traps. The new traps are portable, easy to operate and throw targets to tournament standards. These traps will fill the gap between the Trius type traps and the electric traps.

The new traps are constructed of welded steel tubing which is very strong, giving the needed endurance strength to ensure reliability. The new traps have clean lines with a modern appearance. The new traps are much easier to cock than the Blue Rock. They have a smooth throwing action with no throwing arm flailing at the end of the throwing cycle.

The development work on the Blue Rock 78 trap is complete. Drawings will be transmitted after the Marketing field test is completed.

The design of the Blue Rock Tournament Trap with cocking handle and solenoid release will be finished in September of this year.

Research has met its objectives of developing a new mechanical trap family to replace the Blue Rock and Wonder Traps. The new traps are an innovative design, safe, reliable and well within the cost structure specified. The traps are fabricated completely from purchased parts and will require a minimum of plant effort to produce.

With the addition of these two traps to our product line Research is curtailing any further development work on either mechanical or electrical traps.

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