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FIREARM DESIGN SECTION

ANNUAL REPORT

1964

August 8, 1964

W. E. Leek

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FIREARM DESIGN SECTION

Annual Report

1964

Introduced or announced in 1964 were:

Model 1100 Autoloading Shotgun -- 16 & 20 gauges

Model 600 C. F. Rifle -- Cal. 222; 308; 35 Rem.

Model 700 C. F. Rifle -- New RKW Wood Finish

Models 742 - 760 C. F. Rifles Custom Checkering

~~--- Also new caliber 223 Remington~~ *already*

Model 870 Shotgun --- Custom Checkering

Model 11-48 Shotgun -- Custom Checkering

Model 510-X Series R. F. Rifles -- Option of Wood or

Nylon Stocks

ARM DESIGN 1965 Through 1971

1965 -- Model 600 - 350 Mag. Caliber Carbine Announcement, Jan. 1, 1965

Selling price \$135.00

Specifications

	100 yds. MV	100 yds. ME
Cal. -- 350 Mag. 200 gr. 250 gr.		

Wt. 6 1/2 lbs.

Stock -- Laminated 5 plies beech and walnut

RKW finish

Sling with quick detachable swivels

Impressed checkering at grip and for end

Rubber recoil pad

Special recoil shoulder for scope

Drilled and tapped for scope mounts and receiver sights

Standard sights provide windage and elevation

Ventilated rib barrel

Tapered 18 1/2" barrel

Mag. capacity -- 4 shots

This carbine rifle was specially designed to accommodate the needs of those hunters who want an adequate but light and short carbine for our heaviest ig game hunting. It is especially adapted to quick handling and ease of carrying in a scabbard. The 350 cal. bullet in 200 & 250 grain will provide excellent brush penetrating characteristics and tremendous shock power for any game. Accuracy is exceptional.

1966 - 67 - 68

Center Fire Rifles --

A line of center fire rifles of similar design to the XR Series are under development which will accommodate the following calibers 223 - 444 Mag. - 444 Marlin, - 30-30.

Specifications:

5 shot Box fed system

Barrel tapered 24"

Stock walnut - Monte Carlo butt

Sights adjustable - windage and elevation

Locking system - rotary bolt - multiple lug system

Match type fire control.

These rifles will feature extremely strong locking systems using a multiple set of locking lugs. The fire control will be of a match type with trigger pull adjustment. The receiver and barrel will be tapped for scope and receiver sight mounting with special attention to inertia forces on the scope mount and special adaptation for mounting varmint type super target spot scopes.

The selling price which is in the \$60 - \$70 class is most attractive considering the outstanding features involved.

1968 - 69

After gaining experience in the XR Series and center fire development it is planned to expand the design features and processes into development of a high quality center fire bolt action rifle with features superior to any now in existence. For example, it is envisioned that such a rifle will accommodate all the standard large and small popular cartridges, but will also feature ultra high velocity performance obtained with a tapered bore gain twist barrel design. This principle has been used in artillery but has never been produced commercially in sporting arms. In addition to the features of match fire control scope and sight combinations previously mentioned, these rifles will contain rotary box magazines that guarantee function which is sometimes unreliable in other types. Laminated stocks with special water resisting finishes and metal parts which are rust-proof are planned.

A recoil reducing device has been investigated which can be placed in the fore end of a rifle. It is planned to further develop this feature with the idea of introducing it in this model.

It is believed that these rifles can be manufactured at lower cost than the present Model 700 but can be sold as a high quality premium rifle at a competitive price.

1969 - 71

A new approach to the rifle and receiver design has opened the way to an improved gun system and a lower cost manufacturing process. Forming a receiver cover similar to a N66 but of greater thickness can be accomplished at low cost providing no recesses are required. Design layouts indicate that the recesses normally needed in the receiver to support the moving parts can be supported by the fire control. By making the fire control with a series of laminates of metal and plastic the necessary support of the moving parts can be accomplished. This design is versatile enough to allow for several receiver and fire control shapes and sizes without excessive expenditures in machinery and tooling.

It is planned to explore the possibilities of this process to replace present models of slide and autoloading rim fire, center fire, and shotguns. This may or may not require alteration to the present feed and locking systems. Cost estimates indicate a 30% reduction in the receiver fire control combination over the present manufacture with a considerable reduction in machinery inventory.

A quality fire arm with lower manufacturing costs and versatility in shapes and sizes of the receiver will result.

Processing for Design -- 1965 - 1971

Metal Forming

Several methods of metal forming manufacturing are now in progress to support the arms designs previously mentioned. For example, the Torrington swage process is being explored to develop the receivers and bolts for the rim and center fire rifles. This process will provide internal and external lugs for the receiver and bolt respectively, and at low cost.

GFM machine is the only process known where an integral barrel can be made with a tapered bore and a gain twist. Some basic investigation in this area has been made but high production schedules of the equipment makes further development impossible.

Dynapac

Continued effort is being made to fully utilize the energy capabilities of this machine. Receiver forming, high compression of powder metal and the basic forming of many smaller parts such as firing pins, breech bolts, etc., are being explored.

Plastics

Remington is a leader in forming quality parts by injection molding plastics. The Models N66, N10-11-12, the XP-100 and small parts for the M1100 are several examples. It is planned to proceed further into these versatile processes by installing compression molding equipment and further expand the use of these and other new materials. Compression molding allows lower cost manufacture and the use of lower cost materials in the manufacture of parts not subjected to high stress such as grip caps and fore end tips. This process eliminates stress raisers commonly found in the injection molding process and will allow the introduction of inserts, metal laminates, etc. further expanding our versatility in this area.

It is planned to continue work in the process of forming laminated wood stocks. These stocks will be needed in the future to accommodate recoilless features in our sporting arms.

New metal coloring techniques are needed to improve the quality appearance of our receivers and barrels. It is planned to continue searching for an adequate process that will eliminate the rusting of metal parts and still provide a pleasing gun finish.