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cc: D.E. Miller
H.J. HackmanILION RESEARCH DIVISIONMONTHLY REPORTFEBRUARY 1958SHOTGUNSMODEL "R"

This is a new autoloading shotgun design with a Research model designation. The objective is to provide a new and improved gun with greater use of present machines and tools. Also the design, if successful, could be ready for use in 1960. The gun employs basic improvements over the Sportsman-58 gas operating mechanism, more easily accommodating the new magnum loads as well as the new and lighter target loads. The fore end and stock are being restyled, using new ideas in construction and appearance. Elements of operating mechanism have been in test during the past several months. A completed functioning and appearance model is expected to be ready by September 1958.

SPORTSMAN-5828 & 410 Ga.

Work has been finished on the proposed design and functioning model in each gauge. Further development awaits evaluation of Sales and the Operations Committee.

A-Grade Gun

No further activity on this item pending action by Sales and Operations Committee.

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February 1958MODEL 870 - 28 & 410 Ga.

Functioning design was completed; however, work has not yet been finished on the various "upgrading" appearance changes as requested by Sales. With present working schedules this work will probably not be ready before March 15.

CENTER FIRE RIFLESMODEL 725

Production difficulty was experienced on this model in practically all of the new items such as sights, butt plates, trigger guards, magazine floor plates, stocks, safety, accuracy and center of impact for the barrels. This has necessitated considerable amount of investigation and trouble shooting in the design, process and manufacturing operations, and a marked improvement has been noted with the current production. Research is continuing to work with the Plant in effort to improve the inherent barrel process in order to eliminate some problems relating to accuracy in sighting. The new style sight eliminates the amount of external adjustment, necessitating closer tolerances in barrel manufacture.

Pilot samples of the Caliber 270 in this model are in pilot test. Difficulties in extraction and ejection were encountered. This was found to be due to corrections required on the bolt assembly operations involving the ejector and extractor. Apparently this trouble was discovered earlier by Plant Quality Inspection and is now being taken care of.

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Samples of a new production lot of the 125 Grain ammunition were received from Bridgeport. Test measurements were made with reference rifles and earlier ammunition, the results being satisfactory.

MODEL 722 - CALIBER 222 REM.

The first assembly of pilot rifles should be during the latter part of March, with delivery of magazine components scheduled for the middle of that month. If ammunition is delivered for testing, first warehouse production could be available by April 1.

MODEL "2" - NEW CENTER FIRE RIFLES

Research design work has been started on a new rifle with the objective to provide improved models with greater use of present machines and tools. In addition to changes in the styling of the stocks and fore ends, effort is being made for basic improvements to the gas operating mechanism for a greater reliability as compared to the present Models 740 and 760. It is also expected that we may encounter more active competition in this field and therefore may need a replacement for the current models earlier than anticipated.

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February 1958RIM FIRE RIFLESMODEL 572 LIGHT WEIGHT SERIES

Gold finishing of components for these models is still being processed through Research facilities. Some trouble has been experienced with the front sights shooting loose. Although improvement has been gained by corrections to the sight assembly there is a possibility that we may have to use gold finished steel instead of the gold finish bronze in order to assure a more permanent dovetail sight assembly. This is being investigated further.

MODEL 552 LIGHT WEIGHT SERIES

There has been no further activity on this item. The two color samples were completed and delivered to Sales several months ago. If to be made available for introduction during the year it is important that such decision be cleared as soon as possible.

MODEL 555

Field test results were successful although not all individual reports have been received. These are being summarized for evaluation by Management and Sales, and the project for manufacturing facilities has been released for signatures. There are several design improvements recommended by Sales. Most of these have now been incorporated into the drawings.

The Plant has most recently recommended a review of the front sight design with the idea of providing additional "windage"

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adjustments. This would accommodate greater variations in manufacture and is no doubt suggested as result of their experience with the Model 725. The Plant has also suggested consideration of using heavier material for the steel receiver cover in order to provide for greater variations in forming and machining the grooves for the scope attachment. This will be investigated.

GENERALOLYMPIC RIFLE AND AMMUNITION

Work was started on this contract early in January and included two experimental rifles having certain improvements over the models previously built. A request has been received to have these delivered by March 15. However, some of the work has been limited by the 4-day work week schedules in model making. Most of the metal parts should be complete by March 1, and every effort will be made to complete this work at the earliest possible date.

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CONFIDENTIAL**INDUSTRIAL DESIGN SECTION****MONTHLY REPORT****FEBRUARY 1958****MODEL 440**

Cost estimates are being prepared on the alterations necessary to reduce the weight of the present piston. A sample lot of an improved CP type stud is being made up for testing. This stud will have a larger diameter head to give more support during driving, with less likelihood of damage to the piston.

Firing tests on the knurled buffers have shown encouraging results. These tests included 100 no-work shots in production assembled tools equipped with knurled buffers prepared by our current vendor. Performance of this buffer in the limited tests indicate that the new buffer is superior to the standard buffer now in use.

MODEL 440 Low Cost

Initial firing tests on this tool indicated that some method of recoil reduction will have to be employed to prevent the possibility of the piston striking the buffer during normal firing.

It was also noted that it may be desirable to provide a greater amount of relative rotation between the barrel and the lower (guard) assembly to insure that the tool can always be removed from the piston even if the stud is driven close in a corner.

MODEL 400

Preliminary tests have been made on a modified extractor-ejector for this gun. The new component is designed to

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operate against only one quarter (90°) of the circumference at the rim of the shell. This change -- the previous extractor encircled approx. 180° of the shell -- was made to prevent the occasional binding that occurred when the shell head swelled out against the extractor.

A second model gun, with latest improvements including air-operated action, is being prepared for further testing.

MODEL 455A

Operations Committee approval has been granted for the "Power-Mate" basic unit with various conversion kits. Arrangements are being made to institute this change with the next production of tools.

MODEL 411B

Production of this model is under way. Arrangements are being made to establish a conversion and repair policy for tools in the field.

Field test in the Chicago Area is continuing on the experimental model with the tubular nylon bolt handle and new type extractor. Results thus far are satisfactory.

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2-26-58

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