

November 11, 1992

To: K.W. Soucy
From: W.A. Warren, Jr.

PROGRESS REPORT

This summarizes my activities since joining R&D in August, 1992.

M700 VARMINT SYNTHETIC LONG ACTION IN MAGNUM CALIBERS

This project would expand the current (short action) offerings. The information package is nearly ready to transmit:

- o Drawing changes are 95% complete.
- o The revisions to the parts list is being typed.

Transmittal is being held pending a Review by Marketing on whether to offer this product. This has been started as a "SHOT Show Special". Documentation has been handled in a way that anticipates making this a catalog item in 1994.

The weight of the VS Magnum falls between that of the current wood-stocked BDL Magnum and current wood-stocked BDL Varmint.

The Varmint barrel contour provides adequate strength for magnum cartridges. Its diameter exceeds that of the magnum barrel at all locations except the first 1/2 inch forward of the barrel bracket. The diametral difference here is 0.0125" nominal.

Three prototype long-action VS style stocks have been received from H.S. Precision on 11-6-92.

BASIC RESEARCH-RELEASE MECHANISMS

Benchmarking:

I have completed reviews of several obsolete and current competitive product release mechanisms. These models are from our existing firearms library. Comparisons are made with respect to features, ease of use, complexity and methods of fabrication. To update this activity, we have purchased four new rifles and three after-market release mechanisms. This used \$2200 of \$3000 budgeted in 1992 for competitive bolt action purchases. Two additional competitive models, advertised in 1992, with features comparable to Remington model variations now under development, are not expected to become available before the end of the year. They will be purchased when they become available.

Measurement Apparatus-Purpose and Key Design Criteria:

This apparatus will provide an objective way to measure and describe "force vs. displacement" behavior of manually-operated mechanical devices on firearms (for example, trigger pull). This cannot now be measured with existing facilities. This apparatus will support current and future product development.

The apparatus will be flexible in use. It will be designed to accommodate a variety of Remington and competitive product.

- o Transducers and motor drive system will be selected to provide a wide range of forces, displacements and speeds.
- o Modular fixturing will be used for mounting and locating the major mechanical components and test firearm. Setups will

not need to be permanent or dedicated to a specific model or force measurement. Components can be disassembled and rearranged for a different need.

- o The apparatus will be designed for use in the Res.Measurement Lab. It will be served by the expected new Lab. Transient Data Recorder to capture, process and display results. It will feed this device at least two continuous voltage signals on a common time base. Existing lab. devices will be used to analyze, plot and store results electronically.
- o It will be designed to take replicate measurements quickly, without requiring the operator to record results manually.
- o It is not intended to be readily portable, self-contained, or dedicated to a specific model or characteristic.

Design and Ease of Fabrication Modular fixturing ("Erector Set" construction) and off-the-shelf components will be used wherever practical. This will reduce the amount of tool design and model shop time otherwise required for dedicated design-and-build-here components.

TRANSITIONAL

I have been assisting my ATO Engineering replacement when asked.

MISCELLANEOUS

On an ongoing basis, I am assisting M. Keeny with his process-design integration project.