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From: David Findlay  
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Subject: May Monthly Report

MODEL 522 VIPER

On March 17, the decision was made to hold off introduction of the rifle for the 1993 model year and introduce the gun at the 1993 SHOT Show. The current production and trail and pilot schedule is to build a 100+ rifle design acceptance sample in early June 1992. These guns will be built by engineers and technicians. The components will either be made with production or vendor tooling rather than Tool Room parts. The original plan called for these rifles to be built in the first full week in May, but, other project priorities (Stainless Steel 700, and Camo guns) have delayed the assembly of these rifles.

A full production run of rifles for the trail and pilot sample is scheduled to be run in September. This will give the Test Lab a large sample of rifles for re-testing the production process with production operators. This will give us a high degree of confidence in the first guns we make and will point out any problems related to new operators, forgotten techniques, etc.

The main process concern still revolves around the magazine box from Metal Injection Molding (MIM). MIM recently supplied a initial lot of a 250 piece sample off their new tooling. Inspection of these components revealed that these boxes have been some of the best to date in terms of magazine lip dimensional stability and warping. The cracking problem at the bottom of the foot has been resolved.

Production still is awaiting try out of their magazine box sizing and dimpling fixture. Successful try out and development of this fixture for the June design acceptance test is the long lead item needing resolution in order to build guns.

NCS/11-87 Product Improvement

Work has been initiated to develop a lower cost and improved endurance life gas system for the Model 11-87. It is conceivable that a New Concept Shotgun (NCS) will still utilize a variant of the M/11-87 Gas Compensation system. Efforts revolve around two major approaches:

1. An investigation and redesign of the current 2 piece steel piston and piston seal to utilize a lower cost steel or change in process or dimension of the current design.

2. The design of a stamped "heat shield" stainless steel piston and synthetic plastic piston seal design to reduce cost and improve endurance life.

Initial prototype drawings for both approaches have been designed and were submitted to the tool room for fabrication on April 23.

#### M/541 Heavy Barrel

Work has been initiated on a M/541 Heavy Barrel Silhouette rifle. Marketing has a firm proposal to buy 500-1000 rifles from a dealer. Initial indications are that this will require a new barrel rollmark for the model designation and warning label as well as require some alterations to checkering tooling in order to produce the rifle. A high spot of these tooling changes are estimated to be \$3500-\$5000 dollars. A marked up drawing package of the design work necessary has been given out and a prototype gun has also been initiated in the custom shop. No delivery date for the production run of rifles has been scheduled at this time.

#### M/11-87 Sporting Clays Fore-end Fit

Production and marketing have requested design to enhance the rear fit of the M/11-87 Sporting Clays fore end with the front of the receiver. Current fore ends "rattle" at the back end and have an objectionable amount of movement in Marketing estimation when compared to the competition.

Design has proposed three possible corrective actions:

1. Alter the process to cut the receiver clearance cut at the rear of the fore end as the last operation to improve its dimensional variability and to hold mean figure. This will enhance the fit of the fore end side to side.

2. Taper the bottom radius of the receiver to remove the clearance between the receiver and the rear portion of the fore end. This will eliminate most of the up/down movement.

3. Add a stamped component which slips over the magazine tube and retains the fore end readily from moving both vertically and side to side.

All three approaches are being prototyped but estimating a completion of the components for test and evaluation is not possible due to the low priority of this project.

o XP-100 WOOD STOCK:

The estimate package has been submitted for economic evaluation. The project is expected to be submitted for approval by June 19, 1992.

The test lab has completed the dry cycle endurance testing of Model 700 actions with aluminum bolt plugs. One action successfully completed 50,000 dry cycle firings, the other action successfully completed 37,000 cycles before an unrelated failure of the firing pin occurred. Therefore, the preliminary design evaluation test guns will be assembled with aluminum bolt plugs.

The components for the June preliminary design acceptance test are currently in process. Production has completed fifty XP-100 receivers, the Custom Shop is currently producing barrels and the Tool Room is machining the aluminum bolt plug blanks.

The drawing package has been completed with the exception of the receiver alterations. Once the results of the June testing are published, the receiver prints will be altered. The drawing package will be transmitted by June 30, 1992.