To: Ken Soucy
From: David Findlay
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Subject: June Monthly Report

MODEL 522 VIPER

The current plan is to build a 100+ rifle design acceptance sample in late July 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 plan had been to build these rifles in June but, new difficulties in making the MIM 10 shot magazine box to print has delayed this plan.

MIM's boxes currently have to much twist to be machined properly in subsequent production operations. This includes the production sizing operation. Production has tried using their magazine box sizing and dimpling fixture and while it improves the dimensional characteristics of the box it cannot bring the box into complete conformance. MIM is currently working on two additional coining fixture designs to remove the boxes twist and improve the side radius dimensions. MIM, the Plant, and R&D are working together to bring a speedy resolution to this issue and it is receiving the necessary focus.

A five gun sample of rifles were shot with the current lot of magazine boxes and yielded a 3.3% malfunction rate which was concentrated in only two of the twelve ammunition types (both Remington- 1522&1622). Work is being initiated to discover the reason for this difference, in both gun dimensional factors and ammunition differences between Remington and competitive offerings. At present, due to the dimensional variability in the magazine, no design change can be transmitted even if the current boxes can be made to work. It is also unclear, at this point, the effect the variability of the magazine box is having on the malfunction rate.

A full production run of rifles for the trial and pilot sample is scheduled to be run in September.

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 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. Some components have been received and will be tested in July pending other project priorities.

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's 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. Receivers with the new bottom radius have been received and are an improvement, but not a total solution. Fore ends with the rear receiver clearance cut have been received and are in the tool room for alteration. They will be complete in July. Lastly, the tool room is currently working on the stamped fore end retainer piece and it is expected to be complete and in test in July.