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Subject: August Monthly Report

M/870 - M/1187 12/20 Ga. Cantilever Scope Mount Redesign

Extruded bar samples were received from the vendor in July and sparked a redesign effort with respect to the cantilever attachment. The extruded samples of the cantilever blank material had a surface finish that Research and Process felt was inappropriate for the "Premier" grade shotguns. In addition, the weld vendor specifications for a welder to weld the cantilevers to the barrel would be an the area of 75M dollars. Based on these two considerations, Process felt that a brazed base piece (powder metal part), with a rotoblasted finished cantilever screwed to this base, would solve both concerns. This design is under development.

M/870 - M/11-87 Synthetic Stock and Fore End

Computer modeling of the M/11-87 stock is complete and is being prototyped. The fore end designs for both the M/11-87 and M/870 are complete and the M/870 design is being prototyped in wood to verify the surface model.

M/522 Viper Improvements

Test firing of molded synthetic magazine boxes, in 4 different materials, resulted in encouraging functional performance, but unacceptable endurance life. A redesign of the lip geometry, magazine side, and gating of the mold has been completed to improve endurance life. Upon completion of the alteration of the magazine tooling, re-testing with all 4 potential candidate plastics will resume.

Research is also investigating the possibility of reducing the trigger pull. Approaches being investigated include polishing of selected surfaces, a new sear primary sear design, firing pin spring modification, and a re-designed trigger profile.

M/541 Improvements

Work has been initiated to incorporate several design improvements based on customer requests and complaints.

The first of these is a metal magazine box. To date, a sample MIM metal magazine box based on the M/522 box has been designed and one sample has been fabricated. This sample is currently undergoing endurance testing. Current testing of this one sample has a 0% malfunction rate through 2000+ rounds. A second improvement is the utilization of two takedown screws rather than the current single screw design to enhance the bedding of the rifle. Third, a change to the barrel attachment design is being investigated also to improve accuracy. Currently, the barrel is pinned to the receiver. A threaded joint is being investigated.

cc. R. Orf