

**\*\*CONFIDENTIAL\*\***

September 23, 1991

To: H.C.Munson

From: F.H.Smith

MONTHLY REPORT

MODEL 522 VIPER:

**STOCK MOLD:**

On Friday Sept. 13th. we attempted to hang the stock mold into the 650 ton HPM press in building 76-2, only to discover that the spur bushing in the mold was not on center and would not align with the nozzle on the machine. Because of the spacing between tie bars we will not be able to shift the mold to make this alignment, thus we will not be able to mold stocks in-house at this time. As a result Joe Mead and I have contacted molders on the outside looking for a shop that would be willing and able to run this mold in October. Joe has sent out "Request For Quotes" to three shops; American Plastics, Oneida Plastics, and Harding Manuf. DuPont has told us that they will support us with technical assistance where ever we run the mold. Joe and I have also made layouts showing where the interference is between the mold and the machine and what possible changes could be made to the mold in-order to allow us to hang the mold and run it in the current 650 ton HPM machine. These changes are to be quoted on by R&D Design. We have 4000+ stocks on site, production requirements dictate that we start running 6000 stocks per month starting in November and continuing into next year. The fix to the mold that would allow us to run in-house would mean down time of approx. 3-4 weeks.

The question of what happened to allow us to get in this situation has been asked. In a conversation that I had with American Plastics on Tuesday Sept. 17th. ( American Plastics is the company that built the mold, they sub-contracted the build to Arkansas Tool & Die ) they stated that they knew that the spur bushing was off center of the mold base but that due to the design of the mold and placement of the cavities there was no other choice. They recall being given specifications that would limit the mold base size so that the mold would fit between the tie bars on our machine. They also stated that we witnessed the running of the mold on their equipment and approved the mold and it's design ( R&D

Design was retained to review designs of the molded components for the M/522 ).

**TESTING:**

Production was able to build 15 guns during the week of 9-16. These guns were shot using 50 rounds of Remington High Velocity ammo and 50 rounds of Remington Standard Velocity ammo in each rifle. All rounds were shot in the Focus Factory Gallery by the assemblers. The results of the testing was a 1% overall malfunction rate with no trap shells. The same guns were given to Research to field test, 10 rounds of 12 different ammo types in each gun. The first field test resulted in an approx. 2.2% malfunction rate with 1% being "Fail to Fire", a second field test on the same guns without cleaning resulted in an approx. 5% malfunction rate with 3.5% being "Fail to Fire". Upon reviewing these rifles we determined that the guns got dirty from shooting, in that a build up powder residue inside the receiver was preventing the bolt from fully closing, and that upon release of the firing pin the carrier was pushing the bolt forward to close and thus the firing pin lost energy and was not able to ignite the primer. Measurements are being taken on the receiver and bolts, we are looking at the amount of clearance between the two components and at ways to increase our tolerance for powder residue build up.

These same 15 guns were built by select assembly, matching the receiver and housing assemblies to find combinations that would work together. Jim Smith and Mike Pastella have taken measurements on both housing and receiver assemblies to determine positions of the sears and/or disconnectors. They have found that both the sears and the disconnector are out of position in their assemblies, this causes a fail to engage condition in the assembled gun. It appears that component quality and sub-assembly techniques still need to be refined before we will be able to build production quantities.

**M/552 MAGAZINE TUBE:**

We ordered, received, and altered "Rigid" pipe cutters to crimp inner magazine tubes on the M/522 rifles. This is for the New Jersey law that now limits capacity on auto-loaders. I gave 7 of these to Ken Green with a dimension for placing the crimp correctly on the tube (12 3/8" up from the bottom), Ken is going to distribute these to the recommended gun-smiths in New Jersey.