

May 8, 2003

To: Danny Diaz Scott Franz From: Jim Ronkainen

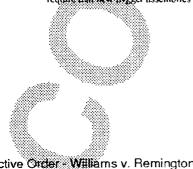
RE: Alteration to Fluted Firing Pin EET Plan

On April 17, 2003, I revised the Engineering Evaluation Test (EET) plant for the floted firing pin to include testing of the trigger assembly from the Bolt Action Maintenance Review (BAMR) program in the SAAMI Jar Off (TLW1116J). SAAMI Rotation (TLW1116K), and SAAMI Drop lesting (TLW1116L). The purpose of this change was to allow for the evaluation if the performance of the fluted firing piu when used in conjunction with the recently transmitted BAMR tragger assembly design in the above named tests.

On May 7, two failures occurred during the course of conducting SAAMI Far Off testing with the BAMR trigger assemblies and the fluted firing pins. The first failure was on gan A-5, a Model 700 ADL Synthetic in 300 Win Mag in the "bottom down" orientation Two drops prior to the failure, the stock on gun A-5 broke and was replaced with a Model 700 ADL Long Action Standard synthetic stock (incorrect barrel channel) because there were no synthetic magnum ADL stocks available. Initially, I attributed the failure on gun A-5 to using the incorrect stock and contained testing with the intent of repeating the test on A-5 with the correct stock when it was available. The second jar off test failure was on gun A-7, a Model 700 Varmint Synthetic in 308 Win in the "bottom up" offentation. After the second failure, all SAAMI Jar Off testing with the BAMR trigger assemblies was halted to investigate the cause of the two failures. Post-test measurements of the trigger assembly settings for both rifles showed there had been no significant change in the trigger/sear engagement or trigger pull force as a result of the SAAMI Jar Off test.

Investigation into the history associated with the BAMR trigger assemblies selected for use in this test found that the trigger assemblies had previously been through a large number of Jar Off/Rotation/Drop/ Extended Jar Off test "impacts" as part of the BANG Design Acceptance Test (DAT). All of the BAMR trigger assemblies used for the finited firing pin testing had 14 previous impacts from SAAMI Jar Off/Rotation/Drop plus from 11 is 30 additional impacts from Extended Jar Off testing, for a total of 32 to 44 impacts per trigger assembly. Previous testing has demonstrated that repeated Jar Off/Rotation/Drop impacts will "sensitize" a trigger assembly and action to impact, causing it to fail tests it had previously passed. The root cause for this sensitization is not currently known or completely understood, but is hypothesized to be related to imperceptible changes to the gun components as a result of the repeated, violent impacts caused by Jar Off/Rotation/Erop testing. Extended Jar Off test impacts pose especially high energy levels for the guns (from 1.3X to 3X the kinetic energy levels of SAAMI Jar Off), hastening the sensitization of the gun to impact testing. In addition to the previous impacts, eleven of the BAMR trigger assemblies had 500 rounds of previous live-fire testing while the twelfth trigger assembly had 1000 rounds of previous free former as part of the BAMR DAT. The BAMR trigger assemblies used on guns A-5 and A-7 had \$3 mid 32 previous impacts, respectively, and 500 rounds each of previous live-fire testing.

The SAAMI test crucical for Jar Off. Rotation, and Drop testing stipulate the use of new trigger assemblies. Based on their history, the BAMR trigger assemblies employed for this testing were not new. Based on my investigation. I believe the previous impact type testing of the BAMR trigger assemblies, especially the Extended far Off testing, sensitized the trigger assemblies to impact testing and was the cause of the failures experienced in our testing. Since the BAMR trigger assemblies were not new and had potentially been sensitized by provides testing, all testing with the BAMR trigger assemblies and the fluted firing pin assemblies was stopped. Any future testing of the fluted firing pin with the BAMR trigger assembly will require that new trigger assemblies be available.



Subject to Protective Order - Williams v. Remington