
From: Ronkainen, Jim
Sent: Friday, July 13, 2007 4:11 PM
To: Joy, Robert L.
Subject: RE: NIB XMP Varmint Gun Trigger Pull Forces

Bob,

I think cycling the safety between trigger pulls may permit more consistent lubrication conditions between the trigger and sear from pull to pull. When the safety isn't used to lower the sear onto the trigger, the firing pin head's impact with the sear while cycling the action slams the sear down on the top of the trigger in an inconsistent manner from cycle to cycle. This in turn squeezes out the lubrication from the interface in an inconsistent manner, which in turn causes the frictional component of trigger pull force to vary from pull to pull.

I've seen this phenomenon with both the XMP and the old style trigger assemblies. In fact, 5 of the 15 guns I have in DAT had old style trigger assemblies and showed nearly identical behavior to the XMP. It is also interesting to note that some trigger assemblies seem to be immune (or nearly so) to the effect of cycling the safety while others are greatly affected – I haven't been able to pin down why that happens.

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From: Joy, Robert L.
Sent: Friday, July 13, 2007 3:26 PM
To: Ronkainen, Jim
Subject: RE: NIB XMP Varmint Gun Trigger Pull Forces

Interesting. Low Sigma and the safety cycling seems to make a significant difference, but I'm at a loss as to why.

Bob

Robert L. Joy
Supervisor - Test & Measurements Lab

From: Ronkainen, Jim
Sent: Friday, July 13, 2007 11:59 AM
To: Perniciaro, Stephen; Shoemaker, Christopher D.; Diliberto, Joseph; Ronkainen, Jim; Doolittle, James F.; Joy, Robert L.; Balio, John R.
Cc: Diaz, Danny
Subject: NIB XMP Varmint Gun Trigger Pull Forces

I have 10 M/700 varmint rifles with untouched-from-the-factory XMP trigger assemblies as test vehicles in a Design Acceptance Test (DAT) being run here in E'town. Prior to removing the trigger assemblies from the actions to conduct my test, I measured the trigger pull force on the 10 guns (see attached) using our Dvorak TriggerScan tester and tabulated the data. Two methods were used when measuring the trigger pull force. The first method did not cycle the safety between trigger pulls while the second method cycled the safety between each trigger pull. Cycling the safety between trigger pulls seems to reduce the dispersion of the measured trigger pull force from pull-to-pull. The trigger pull force results vary from 3.9 lbs to 5.7 lbs for the average of 10 trigger pulls across the 10 rifles using the two methods.

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