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Ilion, New York
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To: J.S. Martin

From: R.C. Ecker

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Objective:

To establish a value or dimension of "trigger creep" (trigger movement that is felt by shooter between the end of slack travel, if any, and the release of the firing pin).

Conclusion:

From the graph of rifles and shotguns, it is quite evident that the border between no creep ( ) and slight creep (x) is an .030 line. However, there is a trace of slight creep below the .030. This is caused by burr or sear edge, but by the same token we have a trace of no creep up in .060 movement area. This amount of movement was not noticeable to sense of feel because of the polished surfaces.

From the over and under graph, a group of no creep piled about the .060 line represents a long movement with no feel because of the polished surfaces. A good percentage of the creep is represented below .060 and is caused by rough surfaces.

Test Details:

The study of the trigger movement was made from a group of fire controls with various design mechanisms, both in rifles and shotguns, to try and relate the amount of trigger movement (creep) with sense of feel.

Each fire control was dry fired in a completely assembled gun several times to get the feel for that particular gun. An opinion was passed and recorded by the tester as to whether creep was present or not.

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Test Details (Continued):

The gun was then placed in a set up as shown by Sketch No. 1. The gun was placed endways, barrel up against an angle iron and held with "C" clamps. Measurements were made with height gage of the height of the trigger from the surface plates with the free motion removed. Then the height gage was anchored to the surface plate and turned down until the firing pin released. The reading was taken and subtracted from the first measurement, and the difference was recorded as trigger displacement. Results are shown on the following pages.

Trigger pull was measured with scales for each gun and recorded in pounds. Each fire control was typed as being one of three types.

1. Sear Hammer Type (as in Remington M/760) where the sear notch of the hammer is the farthest away from the hammer pivot point.

2. Hammer Sear (as in Winchester M/88) where the sear notch is close to the pivot point of hammer.

3. Striker - Blocked Sear (as in Remington M/700) where the striker is blocked and has to be released through a mechanism before the gun can fire.

ECE:ep
Attach.

MODEL	GA. OR CALIBER	SERIAL NO.	COMPUTER OPINION	DISPLACEMENT HI & LO OF THREE READINGS	TRIGGER PULL (LBS.)	TYPE
Rem. 1100	410	L002261H	Creep	.036 - .043		Sear Hammer
Rem. 11-48	28	4043407	Creep	.061 - .068	4.5	Sear Hammer
Rem. 742	243 Wfn.	315580	Creep	.058 - .063	3.8	Sear Hammer
Rem. 760	223 Rem.	485602	Creep	.052 - .057	3.75	Sear Hammer
Rem. 870 Trap		Fire Control	Slight Creep	.035 - .037		Sear Hammer
Rem. 870 Trap		Fire Control	Slight Creep	.034 - .035		Sear Hammer
Rem. 870	12 Ga.	Test #6	Creep	.059 - .062	4.3	Sear Hammer
Rem. 788	222 Rem.	067133	No Creep	.026 - .030	4.3	Striker-Blocked Sear
Rem. 660	6.5mm	105750	No Creep	.020 - .024	3.1	Striker-Blocked Sear
Rem. 660	6.5mm	105750	Slight Creep	.033 - .037		Striker-Blocked Sear
Rem. 660		6226090	No Creep	.019 - .023	3.25	Striker-Blocked Sear
Rem. 660		6226090	Slight Creep	.042 - .045*		Striker-Blocked Sear
Rem. 1100	12 Ga.	Pro. Fire Control	Creep	.059 - .062		Sear Hammer
Rem. 1100	12 Ga.	Ground Hammer Notch Down	No Creep	.027 - .031	4.0	Sear Hammer

Distance ~~was more, and feel~~ was less (believed because the surfaces rubbing are smoother).
Sear hammer describes sear notch as being on top of farthest away from pivot of hammer.
Hammer seal means sear notch under or close to pivot of hammer.

R.C. Ecker:sp
Ilion Research Div.
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MODEL	SERIAL NO.	COMPUTER OPINION	DISPLACEMENT IN & TO OF THREE READINGS	TRIGGER PULL (LBS.)	TYPE
Ithaca 37 [illegible] Ga.	371082780	Slight Creep	.033 - .038	8.0	Hammer Sear
Ithaca 37 12 Ga.	371082540	Creep	.040	7.0	Hammer Sear
Browning 7 Rem. Mag.	69046M9	No Creep	.024 - .031	2.8	Sear Hammer
Ruger M77 243 Win.	2603	Slight Creep	.024 - .027	5.75	Striker-Blocked Sear
Win. 94 25-35 WFC	939430	No Creep	.058 - .059	4.2	Hammer Sear
Weatherby Mark V 300 Mag.	P2358	No Creep	.027 - .035	4.4	Striker-Blocked Sear
Franchi Breshcia	Top -	No Creep	.044 - .054	7.50	Sear Hammer
	Bottom -	Creep	.056 - .058	8.25	
Charles Daly	380811	No Creep	.030 - .040	3.85	Sear Hammer
		Creep	.035 - .043	3.50	
Savage Mod. 440	34782	Creep	.051 - .058	5.4	Sear Hammer
		Creep	.040 - .052	5.0	
Winchester 101	109821	No Creep	.046 - .048	5.3	Sear Hammer
		Creep	.044 - .047	5.4	
Remington Mod. 32	4380	Creep	.051 - .055	3.55	Sear Hammer
		No Creep	.023 - .054	5.35	
Browning	7071157	No Creep	.062 - .065	5.15	Sear Hammer
		No Creep	.062 - .065		
Ithaca Mod. 600		No Creep	.062 - .067	3.6	Hammer Sear
		No Creep	.083 - .092	3.5	
Brono ZH 202	2-280 697	Creep	.118	8.25	
		Creep	.093	7.33	
Savage 330	V 25647	Creep	.073	4.66	Hammer Sear
		Creep	.088	4.41	

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