REMINGTON ARMS COMPANY, INC.

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RESEARCH TEST and MEASUREMENT REPORT – Report No. 812441

NEW DESIGN M/700 TRIGGER/SEAR BLOCK EVALUATION

Prepared by: Ron Williams

Date Prepared: 9/10/82

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Signature Date 9-15-82

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Signature Date 9-14-82

TEST & MEASUREMENT LAB REPORT

REPORT NUMBER: 812441

REPORT TITLE: New Design Trigger/Sear Block Evaluation

MODEL(S): 700 ADL

GAUGE OR CALIBER: 6MM Remington

DATE: 9/10/82

WORK ORDER NO.: C-1803-000

PART NAME: Trigger Assembly

DESIGNER/ENGINEER: F. Martin

TEST TYPE:

1. PHOTO LAB
2. STRENGTH TEST - NO. OF GUNS TESTED _____
3. FUNCTION TEST - NO. OF GUNS TESTED _____
4. ACCURACY TEST - NO. OF GUNS TESTED _____
5. MEASUREMENTS - TYPE: Static
6. ENVIRONMENTAL TEST
7. AMMUNITION TESTING & EVALUATION - TYPE: _____
8. VISUAL EVALUATION - _____ OUT OF _____ GUN SAMPLE
9. ENDURANCE - NO. OF GUNS TESTED: 5

   NO. OF ROUNDS PER GUN 2,500

   TOTAL ROUNDS FIRED IN TEST: 12,500

   AMMO TYPE: MAGS. _____; TARGET: _____

   RIM FIRE _____ CENTER FIRE 6mm

REMINGTON ARMS COMPANY, INC.
Firearms Research Division

Report No. 812441

September 10, 1982

TO: J. H. Hennings

FROM: R. Williams

REPORT TITLE: NEW DESIGN M/700 TRIGGER/SEAR BLOCK EVALUATION

ABSTRACT:

A total of (5) M /700 Fire control assemblies with the New Design safety assemblies, were delivered to the Test Lab by Fred Martin for testing. This safety assembly blocks the trigger and the sear so that the firing pin won't fall when the trigger is held back while the safety switch is pushed from the safe to fire position. Both dry cycle and live fire endurance tests were used to test the assemblies. A M/700 fire control assembly (Current Production) was used as a control and (4) out of the (5) New Design assemblies were used in the test.

SCOPE OF TEST

To evaluate the functional performance of the New Design safety assembly, in the M/700 Rifle during lab testing.

TEST RESULTS

No functional problems arose during testing. Both the New Design safety and the control functioned normally. There was no significant change in the safe.On/Off forces measured before, during and after testing, on all the assemblies, including the control.

REPORT TEXT

All four (4) new trigger assemblies were subjected to the following trick test:

- Place Safety Switch in the Safe "On" position.
- Close the bolt.
- Put constant pressure on the trigger attempting to fire the rifle.
- Push the Safety Switch from the "On" position to the "Off" position.
- Does the firing pin fall?

All four (4) New Design Trigger Assemblies with the trigger /sear blocked passed this test. In all four (4) guns the firing pin did not fall.

NOTE: The measurements recorded for the Safe On/Off forces are questionable. There is no way to determine if they are within Remington Standards, because there are no standards written for these forces with this fire control assembly. The only Remington Standards written for Safe On/Off forces, pertain to the common fire control. That Standard is:

4 – 8 lbs. – One sharp click
Double click not allowed

The Safe On/Off forces measured in this test range from 5.25 lbs to 10.2 lbs. – almost a 5 lb. difference. (Refer to Appendix A, Data Sheets No. 1 – 5 for all Safe On/Off measurements).

TEST PROCEDURE

A. MEASUREMENTS

The following measurements were taken on the five rifles used in this test:

- Headspace
- Firing Pin Indent
- Trigger Pull
- Sear Lift
- Sear Engagement
- Safe On/Off Forces

B. TEST CONDITIONS

1. After every 20 rounds fired, the safety was checked. This was done by holding the trigger and pushing the safety switch from safe to fire.
2. After 1,000 rds. of live fire all the rifles were cleaned and they were remeasured. (Jack Shooting).
3. The rifles were then subjected to Safe On/Off dry cycle. Each rifle was cycled for 2,500 cycles, with Safe On/Off measurements taken every 500 cycles and Sear Lift and Engagement at the 2500 cycle level.
4. The rifles were then live-fired to the 2,000 round level. (Jack Shooting) Measurements were taken at this level.

TEST PROCEDURE – CONT'D.

5. The rifles were then subjected to another Safe On/Off dry cycle test. They were brought to the 5,000 cycle level. (2,500 additional cycles) Safe on/off measurements were taken every 500 cycles and sear lift and engagement wear measured at the 5,000 cycle level.

These same procedures were followed until live fire totaled 2,500 rounds per rifle and safe On/Off dry cycle totaled 7500 cycles per rifle.

C. AMMUNITION

Remington 80 grain Pointed Soft Point.

APPENDIX "A"

Report No. 81244

M-700 TRIGGER/SEAR BLOCK EVALUATION

No. 1

Aug. 31, 1982

R. Williams

M-700	6MMCAL. # A6752973 Sample No. 1	1 Headspace	2 Firing Pin Indent	3 Safe (lbs) On	3 Safe (lbs) Off	4 Trigger Pull (lbs)	5 Sear Lift	6 Sear Engagement
	Start Of Test	Min. +.004"	.025"	6.2	6.0	4.0	.0105"	.035"
	Live Fire after 1,000 rds.	Min. +.004"	.025"	6.2	6.8	4.25		
	Dry Cycle							
	500 cyc.			5.5	8.6			
	1000 cyc.			5.8	9.7			
	1500 cyc.			5.7	9.5			
	2000 cyc.			5.5	8.7			
	2500 cyc.			5.7	9.8		.0105"	.035"
	Live Fire after 2,000 rds.	Min. +.004"	.025"	5.6	7.3	4.0	.0165"	.027"
	Dry Cycle							
	3000 cyc.			6.2	9.8			
	3500 cyc.			6.5	10.8			
	4000 cyc.			5.9	9.2			
	4500 cyc.			6.2	9.5			
	5000 cyc.			6.2	9.2		.0165"	.027"
	Live Fire after 2,500 rds HL.	Min. +.004"	.025"	6.3	8.5	4.5		
	Dry Cycle							
	5500 cyc.			6.2	10.5	4.8		
	6000 cyc.			6.2	10.0	4.6		
	6500 cyc.			6.2	8.8	4.6		
	7000 cyc.			6.0	7.8	4.8		
	7500 cyc.			6.2	9.8	4.6		

Report No. 81244

M-700 TRIGGER/SEAR BLOCK EVALUATION

No. 2

Aug. 31, 1982

R. Williams

M-700	6MM cal. #A6744869 Sample No. 2	1 Headspace	2 Firing Pin Indent	3 Safe (in lbs.) ON	3 Safe (in lbs.) OFF	4 Trigger Pull (in lbs.)	5 Sear Lift	6 Sear Engagement
	START OF TEST	Min+.003"	.023"	6.5	5.3	4.3	.0135"	.026"
	LIVE FIRE after 1000rds.	Min+.004"	.024"	6.4	5.2	4.4		
	DRY CYCLE							
	500 cyc.			5.9	7.8			
	1000 cyc.			6.0	6.7			
	1500 cyc.			6.0	7.0			
	2000 cyc.			5.5	6.7			
	2500 cyc.			5.3	7.7		.015	.025
	LIVE FIRE after 2000rds.	Min+.004"	.023"	5.7	4.8	4.2	.014"	.029"
	DRY CYCLE							
	3000 cyc.			6.5	8.0			
	3500 cyc.			5.5	7.3			
	4000 cyc.			5.8	7.2			
	4500 cyc.			6.2	7.7			
	5000 cyc.			7.8	8.0		.018	.0285
	LIVE FIRE after 2500rds III.	Min+.004"	.023"	5.8	4.5	4.7		
	DRY CYCLE							
	5500 cyc.			7.0	9.5	4.8		
	6000 cyc.			6.7	8.7	4.5		
	6500 cyc.			6.7	7.8	4.5		
	7000 cyc.			7.2	7.8	4.8		
	7500 cyc.			6.6	8.5	4.5		

Report No. 812441

M-700 TRIGGER/SEAR BLOCK EVALUATION

No. 3

Aug. 31, 1982

R. Williams

M-700	6MMcal. #A6744915 Sample No. 3	1 Headspace	2 Firing Pin Indent	3 Safe (in lbs) On	3 Safe (in lbs) Off	4 Trigger Pull (lb)	5 Sear Lift	6 Sear Engagement
	START OF TEST	Min. +.004"	.025"	9.	6.4	4.7	.015"	.025"
	LIVE FIRE after 1000 rds.	Min. +.004"	.026"	9.9	5.9"	4.1		
	DRY CYCLE							
	500 cyc.			8.2	6.9			
	1000 cyc.			8.3	7.0			
	1500 cyc.			8.8	6.3			
	2000 cyc.			9.2	7.0			
	2500 cyc.			9.8	6.0		.012"	.032"
	LIVE FIRE after 2,000 rds.	Min. +.005"	.026"	10.2	5.2		.013"	.033"
	DRY CYCLE							
	3000 cyc.			8.5	8.5			
	3500 cyc.			9.2	7.2			
	4000 cyc.			9.2	9.0			
	4500 cyc.			8.7	9.7			
	5000 cyc.			9.5	12.2		.015"	.032"
	LIVE FIRE after 2500 rds. #II	Min. +.005	.025"	9.8	5.2			
	DRY CYCLE							
	5500 cyc.			8.3	8.3			
	6000 cyc.			9.2	8.8			
	6500 cyc.			9.7	9.3			
	7000 cyc			8.5	12.0			
	7500 cyc			9.5	12.0			

Report No. 8124

M-700 TRIGGER / SEAR BLOCK EVALUATION No. 4

Aug. 31, 1982.

R. Williams

M-700	6MM CAL #6745544 Sample No. 4	1 Headspace	2 Firing Pin Indent	3 Safe (lbs) ON	3 Safe (lbs) OFF	4 Trigger Pull (lbs)	5 Sear Lift	6 Sear Engagement
	START OF TEST	Min +.002	.022	8.3	5.4	3.8	.018	.034
	LIVE FIRE after 1,000 rds	Min +.002	.022	6.8	5.2	4.0		
	DRY CYCLE 500 cyc.			7.7	7.7			
	1000 cyc.			7.8	7.5			
	1500 cyc.			6.8	7.3			
	2,000 cyc.			7.8	7.2			
	2500 cyc.			7.2	7.7		.017	.035
	LIVE FIRE after 2,000 rds.	Min +.003	.022	7.3	4.5	3.8	.0155	.035
	DRY CYCLE 3000 cyc.			6.7	8.7			
	3500 cyc.			7.5	7.7			
	4000 cyc.			7.7	6.7			
	4500 cyc.			7.5	7.7			
	5000 cyc.			7.7	6.8		.017	.036
	LIVE FIRE after 2,500 rds. ttl	Min +.003	.022	8.9	4.3	4.5		
	DRY CYCLE 5500 cyc.			8.2	9.0	4.5		
	6000 cyc.			7.5	9.0	4.1		
	6500 cyc.			7.5	9.3	4.2		
	7000 cyc.			8.3	9.2	4.3		
	7500 cyc.			8.7	8.3	4.3		