

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington



PETERS



Distribution: C. B. Workman

J. W. Brooks

C. E. Ritchie

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RESEARCH TEST and MEASUREMENT REPORT - Report No. 820501

M/700 - NEW DESIGN "RIGHT HAND" SAFETY ASSEMBLY,
NO BOLT LOCK ARM EVALUATION

Prepared by: Ron Williams

Date Prepared: 9-15-82

Proofread and Cleared By:

J.H. Hennings, / R.E. Nightingale,
Foreman-Test Lab / Foreman-Measurement Lab

Signature

Date

C.E. Ritchie,
Sr. Supervisor - Testing,
Meas. & Mech. Analysis Lab

Signature

Date

TEST & MEASUREMENT LAB REPORT

REPORT NUMBER: 820501
 REPORT TITLE: M/700 - New Design "Right Hand" Safety Assembly
 No Bolt Lock Arm 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: J. W. Brooks

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: _____
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. 820501

September 15, 1982

TO: J. H. Hennings

FROM: R. Williams

REPORT TITLE: M-700 NO BOLT LOCK ARM ON SAFETY EVALUATION

ABSTRACT

A total of (5) M/700 Trigger assemblies with bolt lock arm removed and formed with a new die were delivered to the Test Lab by John Brooks for testing. The No-Bolt Lock allows the bolt to be opened when safety switch is in the safe "On" position. Both dry cycle and live fire endurance test were used to test these assemblies.

SCOPE OF TEST

To verify satisfactory functioning of parts with new design changes formed with new die.

TEST RESULTS

No functional problems were encountered during testing. The new design safety assembly functioned normally. There was no significant change in the safe On/Off forces measured before, during and after testing on all assemblies.

M/700 - New Design " Right Hand " Safety Assembly,
No Bolt Lock Arm Evaluation

Report No. 820501

REPORT TEXT

The five (5) New Design safety assemblies received from Production passed every check made on them throughout the tests.

NOTE: The measurements recorded for the safe On/Off forces are questionable. There is no way to determine if they are in 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 4.8 lbs. to 11.3 lbs. - about a 6 lbs. 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

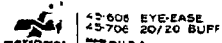
1. Preliminary measurements were taken at start of test.
2. After 1,000 rds. of live fire (Jack Shooting), all rifles were cleaned and remeasured.
3. The rifles were then subjected to safe On/Off dry cycle. Each rifle was cycled for 2,500 cycles, with safe On/Off measurements taken every 500 cycles and sear lift and engagement at the 2,500 level.
4. The rifles were then live fired to the 2,000 round level. (Jack Shooting) Measurements were taken at this level.
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 sear engagement were measured at the 5,000 cycle level.

These same procedures were followed until live fire totaled 2,500 round per rifle and safe On/Off dry cycle totaled 7,500 cycles per rifle.

C. Ammunition

Remington 80 grain Pointed Soft Point. (Index No. R6MM1)

" APPENDIX " A "



Report No. 820501

M-700 No Bolt Lock ARM ON SAFETY EVALUATION

No. 1

Sept. 10, 1982

R. Williams

	M-700	6MM #86752975	HEADSPACE	FIRING PEN INDENT	SAFE (lbs)		TRIGGER Pull (lbs)	SEAR LIFT	SEAR ENGAGEMENT
					ON	OFF			
1		Sample No. 1							
2		START OF TEST	Mint. 004	.025	7.6	6.8	57	.010	.013
3									
4		LIVE FIRE							
5		after 1000 rds.	Mint. 004	.025	5.5	8.5	66	.0115	.0125
6									
7		DRY CYCLE							
8		500 cyc.			8.6	8.3	67	.010	.013
9		1000			9.6	10.3	61		
10		1500			8.5	10.1	63		
11		2000			8.5	9.3	62		
12		2500			8.8	11.0	61	.0115	.0125
13									
14		LIVE FIRE							
15		after 2000 rds	Mint. 004	.025	7.6	6.0	60	.010	.016
16									
17		DRY CYCLE							
18		3000 cyc.			7.6	9.3	56		
19		3500			8.5	9.5	61		
20		4000			8.1	9.3	63		
21		4500			8.3	7.6	62		
22		5000			8.6	10.3	63	.0105	.015
23									
24									
25		LIVE FIRE							
26		after 2500 rds. th	Mint. 004	.022	6.1	5.1	63	.011	.016
27									
28		DRY CYCLE							
29		5500 cyc.			8.0	7.3	60		
30		6000			7.5	7.8	6.3		
31		6500			7.6	7.3	6.3		
32		7000			7.0	7.0	6.1		
33		7500			7.8	6.3	6.1	.012	.015
34									
35									
36									
37									
38									
39									
40									

M-700 No Bolt Lock Arm On SAFETY EVALUATION

No. 2

Sept. 10, 1982

R. Williams

	M-700	6MM #86744869	HEADSPACE	FIRING PEN INDENT	SAFE (lbs)		TRIGGER Pull (lbs)	SEAR LIFT	SEAR ENGAGEMENT
					ON	OFF			
1		Sample No. 2							
2		START OF TEST	Min + .004	.023	8.5	5.0	5.0	.012	.013
3									
4		LIVE FIRE							
5		after 1000 rds.	Min + .004	.023	5.0	6.6	5.2	.013	.0115
6									
7		DRY CYCLE							
8		500 cyc.			7.8	7.6	5.0	.012	.013
9		1000			7.8	8.8	5.1		
10		1500			6.5	9.3	5.1		
11		2000			7.5	10.8	5.0		
12		2500			7.6	11.3	5.0	.010	.014
13									
14		LIVE FIRE							
15		after 2000 rds	Min + .004	.023	8.0	5.3	5.3	.012	.015
16									
17		DRY CYCLE							
18		3000 cyc.			6.6	7.3	5.2		
19		3500			7.1	8.3	5.1		
20		4000			7.3	8.8	5.1		
21		4500			7.0	8.3	5.1		
22		5000			7.3	9.8	5.2	.014	.014
23									
24									
25		LIVE FIRE	Min + .004	.021	7.0	4.8	5.7	.0135	.014
26		after 2500 rds TH							
27									
28		DRY CYCLE							
29		5500 cyc.			6.8	8.0	5.5		
30		6000			6.3	7.1	5.5		
31		6500			6.5	7.8	5.3		
32		7000			6.1	8.0	5.5		
33		7500			6.3	8.6	5.2	.0125	.014
34									
35									
36									
37									
38									
39									
40									

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M-700 No Bolt Lock Arm ON SAFETY EVALUATION

No. 3

Sept. 10, 1982

R. Williams

	M-700	6MM #86744915	HEADSPACE	FIRING		SAFE (lbs)	TRIGGER	SEAR	SEAR
				PEN	INDENT		PULL (lbs)	LIFT	ENGAGEMENT
		Sample No. 3				ON	OFF		
1									
2		START OF TEST	Min +0.04	.024		6.3	4.7	5.4	.0115
3									.0135
4		LIVE FIRE							
5		after 1000 rds.	Min +0.06	.025		4.3	6.1	6.0	.0115
6									.016
7		DRY CYCLE							
8		500 cyc.				6.0	8.6	5.4	.0115
9		1000				7.0	7.3	5.7	.0135
10		1500				7.5	8.1	5.4	
11		2000				7.3	7.8	5.6	
12		2500				7.3	8.0	6.0	.0105
13									.0165
14		LIVE FIRE							
15		after 2000 rds.	Min +0.06	.025		6.0	4.8	6.3	.0115
16									.0175
17		DRY CYCLE							
18		3000 cyc.				6.0	6.6	6.2	
19		3500				7.1	7.0	6.1	
20		4000				6.8	7.0	6.1	
21		4500				7.3	7.5	6.0	
22		5000				7.1	6.6	5.9	.012
23									.0175
24									
25		LIVE FIRE							
26		after 2500 rds. HL	Min +0.06	.023		6.0	4.4	5.9	.013
27									.022
28		DRY CYCLE							
29		5500 cyc.				6.3	6.0	5.8	
30		6000				6.5	6.3	5.9	
31		6500				6.0	7.0	5.9	
32		7000				6.5	6.5	5.9	
33		7500				6.1	5.3	6.2	.010
34									.023
35									
36									
37									
38									
39									
40									

Report No. 820501

M-700 No Bolt Lock Arm On SAFETY EVALUATION

No. 4

Sept. 10, 1982

R. Williams

	M-700	6MM #86745544	HEADSPACE	FIRING SAFE (lbs)		TRIGGER Pull (lbs)	SEAR LIFT	SEAR ENGAGEMENT
				ON	OFF			
1		Sample No. 4						
2		START OF TEST	MINT002	.022	6.5	4.8	5.4	.013
3								
4		LIVE FIRE						
5		after 1000 rds.	MINT003	.022	7.1	6.0	5.6	.012
6								.014
7		DRY CYCLE						
8		500 cyc.			8.1	8.1	5.5	.013
9		1000			8.0	8.2	5.4	
10		1500			7.3	8.8	5.5	
11		2000			8.8	8.0	5.5	
12		2500			8.1	8.8	5.6	.015
13								.014
14		LIVE FIRE						
15		after 2000 rds.	MINT003	.022	6.7	5.1	5.5	.013
16								.015
17		DRY CYCLE						
18		3000 cyc.			7.1	8.0	5.5	
19		3500			6.6	7.3	5.6	
20		4000			7.1	8.1	5.5	
21		4500			6.6	7.1	5.1	
22		5000			6.5	6.6	5.5	.0125
23								.015
24								
25		LIVE FIRE						
26		after 2500 rds. till	MINT003	.020	6.0	4.0	5.5	.012
27								.0205
28		DRY CYCLE						
29		5500 cyc.			5.8	6.5	5.7	
30		6000			6.0	5.1	5.9	
31		6500			6.8	5.6	5.7	
32		7000			6.8	6.0	5.6	
33		7500			6.5	5.3	5.7	.011
34								.0125
35								
36								
37								
38								
39								
40								

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M-700 No Bolt Lock Arm On SAFETY EVALUATION

No. 5

R. Williams

Sept. 10, 1982

	M-700	6MM #6747528	HEADSPACE	FIRING		SAFE (lbs)	TRIGGER Pull (lbs)	SEAR LIFT	SEAR ENGAGEMENT
				PEN	INDENT				
						ON	OFF		
1									
2		START OF TEST	MINT.002	.025	63	44	5.6	.0125	.013
3									
4		LIVE FIRE							
5		after 1000 rds.	MINT.003	.025	66	41	5.6	.014	.014
6									
7		DRY CYCLE							
8		500 cyc.			76	8.0	5.1	.0125	.013
9		1000			71	7.8	5.2		
10		1500			70	7.8	5.4		
11		2000			66	8.3	5.1		
12		2500			75	7.8	5.3	.014	.017
13									
14		LIVE FIRE							
15		after 2000 rds.	MINT.003	.025	62	4.8	5.9	.015	.017
16									
17		DRY CYCLE							
18		3000 cyc.			60	6.0	5.6		
19		3500			70	5.6	5.6		
20		4000			71	5.7	5.9		
21		4500			75	6.1	5.7		
22		5000			59	4.9	5.9	.014	.0165
23									
24									
25		LIVE FIRE							
26		after 2500 rds.	THL MINT.003	.023	63	3.5	5.8	.012	.0195
27									
28		DRY CYCLE							
29		5500 cyc.			58	4.8	5.3		
30		6000			58	6.6	5.3		
31		6500			61	6.3	5.3		
32		7000			58	6.1	5.9		
33		7500			65	6.3	5.3	.012	.0225
34									
35									
36									
37									
38									
39									
40									