REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

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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, Foreman-Test Lab / R.E. Nightingale, Foreman-Measurement Lab

Signature 9-23-82 Date

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

Signature 9/21/82 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.

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"

43-606 EYE-EASE
43-706 20/20 BUFF

Report No. 820501

M-700 No Bolt Lock Arm On Safety Evaluation

No. 1

Sept. 10, 1982

R. Williams

M-700	6MM #B6752973 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	7.6	6.8	5.7	.010	.013
	Live Fire after 1000 rds.	Min+.004	.025	5.5	8.5	6.6	.0145	.0125
	Dry Cycle 500 cyc.			8.6	8.3	6.7	.010	.013
	1000			9.6	10.3	6.1		
	1500			8.5	10.1	6.3		
	2000			8.5	9.3	6.2		
	2500			8.8	11.0	6.1	.0115	.0125
	Live Fire after 2000 rds.	Min+.004	.025	7.6	6.0	6.0	.010	.016
	Dry Cycle 3000 cyc.			7.6	9.3	5.6		
	3500			8.5	9.5	6.1		
	4000			8.1	9.3	6.3		
	4500			8.3	7.6	6.2		
	5000			8.6	10.3	6.3	.0105	.015
	Live Fire after 2500 rds. thl.	Min+.004	.022	6.1	5.1	6.3	.011	.016
	Dry Cycle 5500 cyc.			8.0	7.3	6.0		
	6000			7.5	7.8	6.3		
	6500			7.6	7.3	6.3		
	7000			7.0	7.0	6.1		
	7500			7.8	6.3	6.1	.012	.015

45-706 20/20 BUFF

Report No. 82-0501

M-700 No Bolt Lock Arm On Safety Evaluation

No. 2

R. Williams

Sept. 10, 1982

M-700	6MM #86744869	1	2	3		4	5	6
	Sample No. 2	Headspace	Firing Pin Indent	Safe (lbs) ON	Safe (lbs) OFF	Trigger Pull (lbs)	Sear Lift	Sear Engagement
	Start Of Test	Min. +.004	.023	8.5	5.0	5.0	.012	.013
	Live Fire after 1000 rds.	Min +.004	.023	5.0	6.6	5.2	.013	.0115
	Dry Cycle 500 cyc.			7.8	7.6	5.0	.012	.013
	1000			7.8	8.8	5.1		
	1500			6.5	9.3	5.1		
	2000			7.5	10.8	5.0		
	2500			7.6	11.3	5.0	.010	.014
	Live Fire after 2000 rds	Min +.004	.023	8.0	5.3	5.3	.012	.015
	Dry Cycle 3000 cyc.			6.6	7.3	5.2		
	3500			7.1	8.3	5.1		
	4000			7.3	8.8	5.1		
	4500			7.0	8.3	5.1		
	5000			7.3	9.9	5.2	.014	.014
	Live Fire after 2500 rds. th	Min +.004	.021	7.0	4.8	5.7	.0135	.014
	Dry Cycle 5500 cyc.			6.8	8.0	5.5		
	6000			6.3	7.1	5.5		
	6500			6.5	7.8	5.3		
	7000			6.1	8.0	5.5		
	7500			6.3	8.6	5.2	.0125	.014

Remington Arms Company, Inc. — Bridgeport, Connecticut — Barrett, Connecticut

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M-700 No Bolt Lock Arm On Safety Evaluation

No. 3

Sept. 10, 1982

R. Williams

M-700	6MM #B6744915	1	2	3		4	5	6
	Sample No. 3	Headspace	Firing Pin Indent	Safe (lbs) ON	Safe (lbs) OFF	Trigger Pull (lbs)	Sear Lift	Sear Engagement
	Start Of Test	Min +.004	.024	6.3	4.7	5.4	.0115	.0135
	Live Fire after 1000 rds.	Min +.006	.025	4.3	6.1	6.0	.0115	.016
	Dry Cycle 500 cyc.			6.0	8.6	5.4	.0115	.0195
	1000			7.0	7.3	5.7		
	1500			7.5	8.1	5.4		
	2000			7.3	7.8	5.6		
	2500			7.3	8.0	6.0	.0105	.0165
	Live Fire after 2000 rds.	Min +.006	.025	6.0	4.8	6.3	.0115	.0195
	Dry Cycle 3000 cyc.			6.0	6.6	6.2		
	3500			7.1	7.0	6.1		
	4000			6.8	7.0	6.1		
	4500			7.3	7.5	6.0		
	5000			7.1	6.6	5.9	.012	.0175
	Live Fire after 2500 rds TH	Min +.006	.023	6.0	4.8	5.9	.013	.022
	Dry Cycle 5500 cyc.			6.3	6.0	5.8		
	6000			6.5	6.3	5.9		
	6500			6.0	7.0	5.9		
	7000			6.5	6.5	5.9		
	7500			6.1	5.3	6.2	.010	.023

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M-700 No Bolt Lock Arm On Safety Evaluation — No. 4

Sept. 10, 1982 — R. Williams

M-700	6MM #8674554	1	2	3		4	5	6
	Sample No. 4	Headspace	Firing Pin Indent	Safe (lbs) ON	Safe (lbs) OFF	Trigger Pull (lbs)	Sear Lift	Sear Engagement
	Start Of Test	Mint+002	.022	6.5	4.8	5.4	.013	.013
	Live Fire after 1000 rds.	Mint+003	.022	7.1	6.0	5.6	.012	.014
	Dry Cycle 500 cyc.			8.1	8.1	5.5	.013	.013
	1000			8.0	8.2	5.4		
	1500			7.3	8.8	5.5		
	2000			8.8	8.0	5.5		
	2500			8.1	8.8	5.6	.0145	.014
	Live Fire after 2000 rds	Mint+003	.022	6.7	5.1	5.5	.013	.015
	Dry Cycle 3000 cyc.			7.1	6.0	5.5		
	3500			6.6	7.3	5.6		
	4000			7.1	8.1	5.5		
	4500			6.6	7.1	5.1		
	5000			6.5	6.6	5.5	.0125	.015
	Live Fire after 2500 rds. ttl	Mint+003	.020	6.0	4.0	5.5	.012	.0205
	Dry Cycle 5500 cyc.			5.8	6.5	5.7		
	6000			6.0	5.1	5.9		
	6500			6.8	5.6	5.7		
	7000			6.8	6.0	5.6		
	7500			6.5	5.3	5.7	.011	.0185

Report No. X20501

M-700 No Bolt Lock Arm On Safety Evaluation — No. 5

Sept. 10, 1982 — R. Williams

	1	2	3		4	5	6
M-700 6MM #6747528 Sample No. 5	Headspace	Firing Pin Indent	Safe (lbs) ON	Safe (lbs) OFF	Trigger Pull (lbs)	Sear Let	Sear Engagement
Start Of Test	Min+.002	.025	6.3	4.4	5.6	.0125	.013
Live Fire after 1000 rds.	Min+.003	.025	6.6	4.1	5.6	.014	.014
Dry Cycle 500 cyc.			7.6	8.0	5.1	.0125	.013
1000			7.1	7.8	5.2		
1500			7.0	7.8	5.4		
2000			6.6	8.3	5.1		
2500			7.5	7.8	5.3	.014	.017
Live Fire after 2000 rds.	Min+.003	.025	6.2	4.8	5.9	.015	.017
Dry Cycle 3000 cyc.			6.0	6.0	5.6		
3500			7.0	5.6	5.6		
4000			7.1	5.7	5.9		
4500			7.5	6.1	5.7		
5000			5.9	4.9	5.9	.014	.0165
Live Fire after 2500 rds.	Min+.003	.023	6.3	3.5	5.8	.012	.0195
Dry Cycle 5500 cyc.			5.8	4.8	5.3		
6000			5.8	6.6	5.3		
6500			6.1	6.3	5.3		
7000			5.8	6.1	5.9		
7500			6.5	6.3	5.3	.012	.0225