REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington ~ DUPONT

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RESEARCH TEST and MEASUREMENT REPORT – Report No. 822802

M/700 RELIEVED SEAR SAFETY CAM EVALUATION

Prepared by: R. Howe

Date Prepared: 12.15.82

Proofread and Cleared By:

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

Signature 12-29-82 Date

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

Signature 12/29/82 Date

TEST & MEASUREMENT LAB REPORT

REPORT NUMBER: 822802

REPORT TITLE: M/700 Relieved Sear Safety Cam Evaluation

MODEL(S): 700

GAUGE OR CALIBER:

DATE: 12 - 15 - 82

WORK ORDER NO.: C-1803-000

PART NAME: Sear Safety Cam

DESIGNER/ENGINEER: L. J. Hagen

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: _____

   NO. OF ROUNDS PER GUN: _____

   TOTAL ROUNDS FIRED IN TEST: _____

   AMMO TYPE: MAGS. _____; TARGET: _____

   RIM FIRE _____ CENTER FIRE ___
10. Dry Cycle No. of samples – 18
    Max Cycles Per Sample – 25,000.

December 15, 1982

TO: J. H. HENNINGS

FROM: R. HOWE

REPORT TITLE: M/700 RELIEVED SEAR SAFETY CAM EVALUATION

ABSTRACT

L. J. Hagen requested the Test Lab conduct a Dry Cycle Cock and Fire Lubrication Test on 18 M/700 Fire Control assemblies. Eleven (11) of these having .020" of material relieved from each side of the sear safety cam and 7 having .030" relieved.

SCOPE OF TEST

To compare the performance of the two relieved sear safety cams.

TEST RESULTS

All 18 fire control assemblies went the full 25,000 dry cycles without any failures.

REPORT TEXT

A Trigger Pull, Sear Lift, Sear Engagement, Safe On and Off Measurements were taken on each test component at the start of the test and at every 5,000 cycles. Remington specs, are:

1. Trigger Pull 3.0 Lbs. to 5.0 Lbs.
2. Sear Lift .005" to .018"
3. Sear Engagement .015" to .020"
4. Safe "On - Off" Lbs. – None Established

Refer to Appendix "A" Data Sheets 1 through 5 for individual results.

TEST PROCEDURE

A. Measurements
   1. Trigger Pull
      Trigger Pull measurements were taken using a Chatillon Model IN-10 Pull Scale.
   2. Sear Lift and Engagement
      Sear Lift and Engagement measurements were taken using a Model FC-14 Optical Comparator and Measuring Machine.
   3. Safe "On" and "Off" Forces.
      Safe On and Off Lb. Forces were taken using a Chatillon DPP-10 or DPP-25 Push Pull Scale.

B. Lubrication
   1. DuPont Teflon Wet Lubricant was used for all lubricating.
   2. Lubrication Procedure
      All Fire Control assemblies tested were lubricated with DuPont Teflon Wet Lubricant, by spraying approximately 1 second burst both into Sear Inspection Hole and directly onto top of Sear Safety Cam with Bolt removed from the gun.

Report No. 822802

"APPENDIX "A"

REPORT 822802

REPORT TITLE: M/700 RELIEVED SEAR SAFETY CAM EVALUATION.

DATE: 12-15-82 (020 RELIEVED SEARS) R. HOWE (1)

M-700	FIRE CONTROL #1-.020	SAFE (AVG. OF 3) ON	LBS. OFF	TRIGGER PULL LBS (AVG. OF 3)	SEAR LIFT	SEAR ENGAGEMENT
	START OF TEST	6.8	8.0	4.3	.009	.020
	DRY CYCLE					
	5,000	9.0	10.4	4.0	.0085	.020
	10,000	7.6	11.3	3.8	.0085	.020
	15,000	7.0	11.0	3.5	.0095	.020
	20,000	6.9	14.0	4.0	.0095	.02105
	25,000	7.4	15.5	3.9	.0095	.021
	FIRE CONTROL #2-.020					
	START OF TEST	6.5	8.1	5.0	.0075	.018
	DRY CYCLE					
	5000	6.8	9.2	4.5	.008	.0175
	10,000	6.7	9.4	4.3	.008	.018
	15,000	6.5	9.0	4.5	.008	.018
	20,000	6.3	9.3	4.6	.008	.0185
	25,000	6.6	9.4	4.2	.008	.0185
	FIRE CONTROL #3-.020					
	START OF TEST	7.6	13.3	4.0	.007	.018
	DRY CYCLE					
	5,000	8.0	13.5	4.1	.007	.0185
	10,000	7.8	13.3	4.3	.0075	.018
	15,000	7.8	9.8	4.0	.007	.0185
	20,000	7.1	9.1	4.0	.007	.018
	25,000	6.6	9.3	4.0	.007	.018
	FIRE CONTROL #4-.020					
	START OF TEST	7.9	7.3	4.0	.006	.018
	DRY CYCLE					
	5,000	8.0	7.4	4.1	.006	.018
	10,000	8.1	7.2	3.9	.006	.018
	15,000	7.6	8.8	4.4	.0065	.0185
	20,000	7.1	9.1	4.3	.006	.0185
	25,000	7.0	9.1	4.5	.006	.0185
	REM. SPECS.	N.A.	N.A.	3.0-5.0	.005-.018	.015-.020

REPORT 822802

REPORT TITLE: M/700 RELIEVED SEAR SAFETY CAM EVALUATION.

DATE: 12-15-82 (.020 RELIEVED SEARS) R. HOWE (2)

M-700	FIRE CONTROL #5-.020	SAFE (AVG. OF 3) ON	LBS. OFF	TRIGGER PULL LBS (AVG. OF 3)	SEAR LIFT	SEAR ENGAGEMENT
	START OF TEST	7.3	8.0	4.3	.006	.024
	DRY CYCLE					
	5,000	7.4	8.0	4.2	.006	.0235
	10,000	6.9	8.0	4.2	.0065	.0235
	15,000	6.5	6.7	4.1	.006	.024
	20,000	6.4	6.5	4.2	.006	.024
	25,000	6.0	5.3	4.2	.006	.0245
	FIRE CONTROL #6-.020					
	START OF TEST	5.8	7.3	4.6	.007	.020
	DRY CYCLE					
	5000	5.7	7.4	4.5	.007	.020
	10,000	5.5	7.3	4.5	.0065	.020
	15,000	5.5	6.5	4.2	.007	.020
	20,000	5.3	6.4	4.2	.007	.021
	25,000	6.5	8.5	4.2	.006	.020
	FIRE CONTROL #7-.020					
	START OF TEST	6.5	7.8	3.6	.0085	.022
	DRY CYCLE					
	5,000	6.5	7.8	4.0	.008	.022
	10,000	6.8	7.6	3.5	.0085	.022
	15,000	5.8	7.3	3.5	.008	.0215
	20,000	6.0	7.1	3.6	.008	.022
	25,000	6.2	7.3	3.5	.008	.022
	FIRE CONTROL #8-.020					
	START OF TEST	5.6	6.0	5.2	.0065	.019
	DRY CYCLE					
	5,000	5.7	6.1	5.1	.006	.019
	10,000	5.6	6.2	5.2	.0065	.019
	15,000	6.3	6.3	4.7	.006	.0195
	20,000	6.5	6.4	4.5	.006	.019
	25,000	6.3	6.5	4.5	.007	.019
	REM. SPECS.	N.A.	N.A.	3.0-5.0	.005-.014	.015-.020

REMINGTON ARMS COMPANY, INC. — REPORT # 522802

REPORT TITLE: M/700 RELIEVED SEAR SAFETY CAM EVALUATION.

DATE: 12-15-82 (.020 RELIEVED SEARS) R. HOWE (3)

M-700	FIRE CONTROL	SAFE (AVG. OF 3)	LBS. (AVG. OF 3)	TRIGGER PULL LBS (AVG. OF 3)	SEAR LIFT	SEAR ENGAGEMENT
		ON	OFF			
	START OF TEST	6.4	9.6	3.7	.007	.0195
	DRY CYCLE					
	5,000	6.5	9.5	3.6	.0065	.019
	10,000	6.3	9.5	3.5	.007	.019
	15,000	7.5	13.3	4.0	.007	.019
	20,000	7.5	13.5	4.1	.007	.019
	25,000	7.6	14.0	3.8	.007	.021
	FIRE CONTROL					
	#10-020					
	START OF TEST	5.8	7.4	5.5	.006	.019
	DRY CYCLE					
	5000	5.9	7.3	5.3	.006	.019
	10,000	5.7	7.2	5.4	.006	.0195
	15,000	5.8	7.3	5.3	.006	.019
	20,000	5.8	7.2	5.3	.0065	.019
	25,000	6.2	7.4	4.9	.006	.0195
	FIRE CONTROL					
	#11-.020					
	START OF TEST	6.6	5.8	4.9	.0075	.018
	DRY CYCLE					
	5,000	6.5	5.1	4.2	.007	.018
	10,000	6.5	5.0	4.3	.0075	.018
	15,000	6.5	5.2	4.4	.0075	.018
	20,000	6.4	5.1	4.3	.007	.0185
	25 000	5.5	5.1	3.6	.007	.018
	FIRE CONTROL					
	#					
	START OF TEST					
	DRY CYCLE					
	5,000					
	10,000					
	15,000					
	20,000					
	25,000					
	REM. SPECS.	N.A.	N.A.	3.0-5.0	.005-.018	.015-.020

REPORT 822802

REPORT TITLE: M/700 RELIEVED SEAR SAFETY CAM EVALUATION.

DATE: 12-15-82 (.030 RELIEVED SEARS) R. HOWE (4)

M-700	FIRE CONTROL #1-.030	SAFE (AVG. OF 3) ON	LBS. (AVG. OF 3) OFF	TRIGGER PULL LBS (AVG. OF 3)	SEAR LIFT	SEAR ENGAGEMENT
	START OF TEST	7.1	2.9	3.6	.008	.020
	DRY CYCLE					
	5,000	7.5	8.2	4.0	.008	.020
	10,000	6.6	6.4	2.7	.0085	.0195
	15,000	6.2	6.8	2.5	.008	.0195
	20,000	6.2	6.6	2.4	.009	.019
	25,000	6.2	6.8	2.4	.009	.019
	FIRE CONTROL #2-.030					
	START OF TEST	8.0	7.6	4.8	.009	.018
	DRY CYCLE					
	5000	7.0	6.7	3.9	.0085	.018
	10,000	7.0	6.9	3.6	.0085	.018
	15,000	6.7	6.8	3.9	.009	.018
	20,000	6.4	7.2	4.0	.009	.0185
	25,000	6.4	7.0	4.0	.009	.018
	FIRE CONTROL #3-.030					
	START OF TEST	6.5	6.5	4.9	.007	.019
	DRY CYCLE					
	5,000	6.5	6.4	5.0	.007	.019
	10,000	7.2	6.5	5.8	.0075	.019
	15,000	6.6	5.6	5.3	.007	.019
	20,000	6.7	5.7	5.2	.007	.0195
	25,000	6.4	5.5	5.4	.007	.019
	FIRE CONTROL #4-.030					
	START OF TEST	7.8	8.5	5.2	.0065	.020
	DRY CYCLE					
	5,000	8.0	8.6	5.3	.006	.020
	10,000	8.0	8.5	4.3	.006	.019
	15,000	7.6	8.1	4.8	.0065	.0195
	20,000	7.5	8.2	4.9	.006	.020
	25,000	7.0	7.6	4.2	.0065	.0205
	REM. SPECS.	N.A.	N.A.	3.0-5.0	.005-.018	.015-.020

REMINGTON ARMS COMPANY, INC. — ILION, NEW YORK

REPORT # 822802

REPORT TITLE: M/700 RELIEVED SEAR SAFETY CAM EVALUATION.

DATE: 12-15-82 (030 RELIEVED SEAR) R. HOWE (5)

M-700	FIRE CONTROL #5-030	1 SAFE (AVG. OF 3) ON	2 LBS. OFF	3 TRIGGER PULL LBS (AVG. OF 3)	4 SEAR LIFT	5 SEAR ENGAGEMENT
	START OF TEST	7.1	9.3	5.5	.0065	.022
	DRY CYCLE					
	5,000	7.1	9.4	5.5	.0065	.022
	10,000	6.9	9.1	5.4	.0065	.022
	15,000	7.6	8.0	4.8	.006	.0225
	20,000	7.5	8.4	5.0	.006	.022
	25,000	7.7	9.0	5.2	.006	.0215
	FIRE CONTROL #6-030					
	START OF TEST	6.4	7.1	4.0	.0065	.020
	DRY CYCLE					
	5000	6.3	7.2	4.2	.006	.020
	10,000	6.4	7.0	4.1	.006	.020
	15,000	6.2	6.8	4.0	.0065	.0205
	20,000	7.5	7.0	4.1	.006	.020
	25,000	6.5	7.5	4.1	.006	.020
	FIRE CONTROL #7-030					
	START OF TEST	6.3	9.0	4.9	.007	.018
	DRY CYCLE					
	5,000	6.5	9.1	5.0	.007	.018
	10,000	6.3	9.0	4.8	.007	.018
	15,000	6.8	9.8	4.9	.007	.018
	20,000	6.9	9.7	4.7	.0065	.018
	25,000	6.5	10.6	4.3	.0065	.018
	FIRE CONTROL #					
	START OF TEST					
	DRY CYCLE					
	5,000					
	10,000					
	15,000					
	20,000					
	25,000					
	REM. SPECS.	N.A.	N.A.	3.0-5.0	.005-.014	.015-.020