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RESEARCH TEST and MEASUREMENT REPORT – Report No. 830941

M/SEVEN LWT. PENDULUM DROP TEST TO EVALUATE NEW TRIGGER DESIGN.

Prepared by: R. Howe

Date Prepared: 4-6-83

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Signature Date

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Sr. Supervisor - Testing,
Mass. & Mech. Analysis Lab

Signature Date 4/25/83

TEST & MEASUREMENT LAB REPORT

REPORT NUMBER: 830941

REPORT TITLE: M/Seven LWT. Pendulum Drop Test To Evaluate New Trigger Design

MODEL(S): M/Seven LWT.

GAUGE OR CALIBER: .243

DATE: 4 - 6- 83

WORK ORDER NO.: C-1809-000

PART NAME: Trigger

DESIGNER/ENGINEER: D. Bullis

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: 4

   NO. OF ROUNDS PER GUN: _____

   TOTAL ROUNDS FIRED IN TEST: _____

   AMMO TYPE: MAGS. _____; TARGET: _____

   RIM FIRE _____ CENTER FIRE ___

REMINGTON ARMS CO., INC.
Firearms Research Division

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April 6, 1983

TO: C. E. RITCHIE

FROM: R. W. HOWE

REPORT TITLE: M/SEVEN LWT PENDULUM DROP TEST TO EVALUATE NEW DESIGN TRIGGER

ABSTRACT

On April 4, 1983, a request was received to test three (3) M/Seven LWT. rifles. Two with New Style Trigger, one with the Old Style Trigger, and also one M/700 with old style trigger. D. Bullis, Current Firearms Design, requested the Test Lab to do a Pendulum Drop Test on these four rifles. To evaluate the Jar-Off resistance of the Fire Control Assembly.

SCOPE OF TEST

To evaluate and compare the Jar Off resistance of the Fire Control Assembly at a 3' drop height against a hardwood back stop.

TEST RESULTS

Some Jar-Offs did occur in the top and bottom side modes at various heights as described in Result Sheet Appendix "A".

BARBER - PRESALE R 0113587

REPORT TEXT

1. Trigger Pull and Sear Engagement was preset at minimum present Remington Specs.

   Present Remington Specs. are:

Trigger Pull Lbs.	3.0	to	5.0 lbs.
Trigger Sear Eng.	.015	to	.020

2. The four rifles were drop tested at the 3' drop height against a hardwood backstop in the following modes:

   Muzzle First W/Safe in "On" & "Off" positions
   Butt First W/Safe in "On" & "Off" positions
   Right Side W/Safe in "On" & "Off" positions
   Left Side W/Safe in "On" & "Off" positions
   Top Side W/Safe in "On" & "Off" positions
   Bottom Side W/Safe in "On" & "Off" positions

   Results in Appendix "A".

   Note: During drop test, some Jar-Off did occur in the top and bottom side modes so it was decided to drop these guns at various other levels to determine what height the Jar-Off would occur. Other drop levels and results are recorded in Appendix "A".

3. After the first drop test was completed, all four (4) rifles were set at the minimum (3.0lb.) trigger pull and re-dropped in all test modes.

   Also, one M/700 rifle from Test Report No. 820391 was added to this test. This rifle contained a new design trigger spring and screw as per Drawing Nos.:

   Trigger Spring Dwg. No. SK A-3687
   Trigger Screw Dwg. No. SK B-3688

   Results in Appendix "A".

TEST PROCEDURE

A. Measurements

Trigger Pull was taken at the start of each test.

Sear Engagement was taken at the start of each test.

Test Conditions

1. Trigger pull forces were taken on all test guns using a Chatillon Model IN-10 Spring Pull Scale (See Appendix "A".)
2. Sear Engagement was set on productions Optical Comparator in M/700 final assembly area. (See Appendix "A".)
3. The Pendulum Drop Test was conducted on all test rifles at the 3' and the various other drop levels against a hardwood backstop from the muzzle, butt, both sides, top and bottom. (See Appendix "A".

Rifles Used in Test

M/Seven - Serial No. 7601285, Serial No. 7601292, Serial No. 7601289

M/700 - Serial No. A6351001, Serial No. B6341922

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APPENDIX "A"

M/7 NEW STYLE TRIGGER EVALUATION

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DROP/JAR-OFF TEST ON HARDWOOD SURFACE FROM 3' DROP EVALUATION		TEST #1 M/7 New Style Trigger		TEST #1 M/7 New Style Trigger		TEST #1 M/7 Old Style Trigger		TEST #1 M/700 Old Style Trigger		TEST #2 M/7		TEST #2 M/7		TEST #2 M/7		TEST #2 M/700	
Serial #		#7601285		#7601292		#7601289		#A6351001		#7601285		#7601292		#7601289		#16351001	
SAFE POSITION		On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off	On	Off
TRIGGER PULL (Lbs.) Avg.		3.5 lbs.		316.		4.75lb.		5.75lb.		3.01b.		3.01b.		3.01b.		3.01b.	
SEAR ENGAGEMENT		.015"		.015"		.015"		.015"		.015"		.015"		.015"		.015"	
MUZZLE FIRST		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
BUTT FIRST		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
RIGHT SIDE		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
LEFT SIDE		Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
BOTTOM SIDE	12"	-	Ok	-	Ok	-	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok
	18"	-	3 J/O4	-	1 J/O4	-	Ok	Ok	Ok	Ok	1 J/O4	Ok	3 J/O4	Ok	2 J/O4	Ok	4 J/O4
	24"	-	4 J/O4	-	2 J/O4	-	1 J/O4	Ok	Ok	Ok	2 J/O4	Ok	4 J/O4	Ok	4 J/O4	Ok	4 J/O4
	36"	Ok	4 J/O4	Ok	4 J/O4	Ok	2 J/O4	Ok	Ok	Ok	J/O	Ok	J/O	Ok	J/O	Ok	J/O
TOP SIDE	12"															Ok	Ok
	18"															Ok	Ok
	24"															Ok	Ok
	36"	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	Ok	J/O

NOTE: J/O means – Jar-Off (i.e. 3 J/O 4 means 3 Jar-Offs out of 4 tries)

CERitchie:js
4/10/83