

APRIL 1983

"CONFIDENTIAL by stipulation and order entered in Isachalis v. Remington Arms, Inc., et al., Supreme Court of the State of New York, County of Westchester, Index No. 9344/95"

TO C E RITCHIE
FROM R. W. HOWE

TEST TITLE: M/700 NEW DESIGN TRIGGER SCREW & SPRING EVALUATION

ABSTRACT.

R & D
RECENTLY RESEARCH & DESIGN TEST LAB RECEIVED FOUR M/700 TRIGGER HOUSING ASSEMBLIES CONTAINING NEW DESIGN TRIGGER SCREWS (AS PER DRAWING # SK-B-3688) AND TRIGGER SPRINGS (AS PER DRAWING # SK-A-3687). PROCESS ENGINEERING, THROUGH T. J. PLUNKETT, ENGINEER, CURRENT PRODUCTS DESIGN, REQUESTED THE TEST LAB EVALUATE THE ABOVE NEW DESIGN PARTS BY DRY CYCLE AND PENDULUM DROP TESTING.

SCOPE OF TEST:

TO DETERMINE BY DRY CYCLE & PENDULUM DROP TESTING IF THE ABOVE ~~NEW DESIGN~~ ^{NEW} PARTS, WILL CAUSE TRIGGER PULL CHANGES AND IF REDESIGNED TRIGGER SCREW & SPRING WILL SET, DURING TEST.

TEST RESULTS:

TRIGGER PULL POUND FORCE DID RISE DURING DRY CYCLE TEST BUT RETURNED TO ACCEPTABLE LEVELS WHEN LUBRICATED WITH TEFLON WET LUBE DURING ^{THE PENDULUM} DROP TEST SOME JAR OFF DID OCCUR IN THE "TOP" AND "BOTTOM" DROP MODES.

INDIVIDUAL RESULTS IN APPENDIX A.

REPORT TEXT:

1. TRIGGER PULL, ~~COMPRESSOR~~ ^{TRIGGER SENR} ~~ENGAGEMENT~~ + ~~TRIGGER~~ OVER TRAVEL WERE SET TO PRESENT REMINGTON SPECS.
PRESENT REMINGTON SPECS. ARE:
TRIGGER PULL - 3.0 LBS TO 5.0 LBS
ENGAGEMENT 0.15" TO 0.20"
OVER TRAVEL

2. ALL FOUR TEST VEHICLES WERE PLACED IN TEST LAB m/700 RIFLES.

3. TRIGGER PULL LB. FORCES WERE TAKEN AND RECORDED ON ALL FOUR RIFLES.

PRESENT REMINGTON SPECS, IN ITEM ONE ABOVE

4. THE FOUR RIFLES WERE DRY CYCLED TO 15,000 CYCLES EACH WITH TRIGGER PULL RECORDED AT 0-300-600-1,000 ^{CYCLES} AND EVERY 1,000 CYCLES THERE AFTER.

NOTE: ALTHOUGH THE WORK REQUEST CALLED FOR NO ADJUSTMENTS OR LUBRICATION DURING THIS TEST IT WAS DECIDED BY J.W. BROOKS, SUPERVISOR, CURRENT PRODUCTS DESIGN THAT "TEFLON WET" SHOULD BE APPLIED WHEN IT ^{BECAME} ~~WAS~~ APPARENT THAT THE TRIGGER PULL FORCES WERE RAISING TO UNACCEPTABLE LEVELS DURING DRY CYCLE TEST, DUE TO LACK OF LUBRIC^{ATION} ~~ATION~~.

5. THE FOUR RIFLES WERE THEN PENDULUM DROP TESTED AGAINST BOTH A NEOPRENE AND A HARD WOOD BACK STOP AT THE 2'-4'-6' LEVELS IN THE FOLLOWING MODES.

REPORT TEXT CONT.

3

MUZZLE FIRST WITH SAFE "ON" AND WITH SAFE "OFF"
 BUTT " " " " " " "
 LEFT SIDE " " " " " "
 RIGHT SIDE " " " " " "
 TOP SIDE " " " " " "
 BOTTOM SIDE " " " " " "

NOTE: AFTER COMPLETION OF ^{THE ABOVE} DROP TEST IT
 WAS DECIDED TO SET RIFLE #6 TO
 THE MIN. TRIGGER PULL ^{30 LBS} AND ^{SPAN} ENGAGEMENT .015"
 SPECS. AND RE DROP TEST. TO DETERMINE
 IF THESE ^{MIN.} CONDITIONS ARE DIRECTLY
 RELATED TO JAR OFF SITUATIONS,

ALL INDIVIDUAL RESULTS IN APPENDIX A PAGE #2

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A MEASUREMENT:

- ### B. TEST CONDITIONS.

4. A PENDULUM DROP TEST WAS CONDUCTED ON ALL FOUR RIFLES AT THE 2-4 & 6 FOOT ~~TEST~~ ^{LEVELS} ~~HEIGHTS~~ ON BOTH HARD WOOD AND NEOPRENE BACK STOPS FROM THE MUZZLE, BUTT, BOTH SIDES, TOP AND BOTTOM.

C. RIFLES USED IN TEST.

RIFLE + TRIGGER HOUSING #

SERIAL

B6341922
B6350761
A 6338848
A 6817650

REPORT TITLE M/700 NEW DESIGN TRIGGER SCREW AND SPRING EVALUATION REPORT # 820391

WO# C-1802-000

SERIAL NO.	B-6341922				B-635761				A-6338848				A-6817650				
GUN NO.	#6				#7				#8				#9				
START OF TEST TRIGG. PULL LBS.	1	2	3	AVG	1	2	3	AVG	1	2	3	AVG	1	2	3	AVG	
X 300 CYC.	500	540	500	5.0	530	525	530	5.4	430	400	400	4.1	325	500	500	4.9	
X 600	500	450	500	4.8	530	530	530	5.5	450	425	400	4.2	300	525	500	5.0	
X 1000 EVERY 1000 TRIGG. AFTER	430	500	450	4.6	525	530	530	5.5	500	425	425	4.8	500	425	425	4.8	
1200 1000	500	525	500	5.0	530	530	530	5.5	450	500	450	4.6	525	500	500	5.0	
1400 1200	700	725	700	7.0	700	700	700	7.0	525	530	525	5.5	525	525	500	5.1	
1600 1400	700	750	750	7.3	800	825	800	8.0	530	530	600	5.6	475	475	475	4.7	
1800 1600	1000	1000	1000	10.00	1000	1000	1000	10.00	750	800	750	7.6	500	475	500	4.9	
2000 1800	OVER 1000 LBS																
2200 2000	500	500	500	5.0	475	500	530	5.0	800	825	800	8.0	450	475	475	4.6	
2400 2200	425	450	425	4.3	450	450	450	4.5	750	850	750	7.8	500	500	475	4.9	
2600 2400	425	375	400	4.0	375	425	450	4.1	550	850	850	8.5	450	475	450	4.5	
2800 2600	375	400	375	3.8	400	450	400	4.5	500	550	825	8.7	550	500	600	5.5	
3000 2800	400	375	375	3.8	425	400	450	4.4	850	875	850	8.5	550	530	550	5.5	
3200 3000	400	400	375	3.9	450	450	450	4.5	825	875	850	8.3	500	530	530	5.3	
3400 3200	375	400	425	4.0	450	425	425	4.3	425	450	400	4.2	425	425	425	4.2	
4,2	0011000	375	400	425	4.0	450	425	425	4.3	425	450	400	4.2	425	425	425	4.2
4,5	0012000	400	375	375	3.7	400	400	400	4.0	350	325	375	3.5	500	475	450	4.7
	13000	375	375	400	3.8	425	400	425	4.1	375	350	325	3.5	475	525	600	5.0
4,8	0014000	375	375	375	3.7	400	400	400	4.0	325	325	325	3.2	475	475	475	4.7
	15000	400	400	375	3.9	425	425	400	4.3	350	350	350	3.5	450	450	425	4.5

R2514623

NOTE

GUN #6 & #7 WERE LUBED AT 5,000 DRY CYCLES
W/ TEFLOX WET LUBE TRIGGER PULL RETURNED
TO 5 LBS ON BOTH (WHEN CHECKED BEFORE FURTHER CYCLES)

GUN #8 & #9 WERE LUBED AT 10,000 DRY CYCLES
W/ TEFLOX WET LUBE TRIGGER PULL WENT TO
4.2 ON #8 AND 4.5 ON #9, (WHEN CHECKED BEFORE FURTHER CYCLES.)

(NOTE: THE ADDITION OF TEFLOX WET IS REPORT)

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REPORT NO. _____

DRY CYCLE SUMMARY

PAGE NO. _____

TESTER: _____

TEST TITLE: _____

PREVIOUS CYCLES: _____

RIFLE NO. _____

DRY CYCLE SIMULATOR NO. _____

BOLT NO. _____

CYCLE RATE: _____

FIRE CONTROL NO. _____

LUBRICATION: _____

WORK ORDER NO. _____

NO. OF CYCLES: _____

TOTAL: _____

SEAR LIFT: _____

SEAR ENGAGEMENT: _____

TRIGGER PULL: 1. _____ 2. _____ 3. _____

OBSERVATIONS: SAFE ON FORCE

SAFE OFF FORCE

BOLT LIFT-COCKED

BOLT LIFT-FIRED

1. _____

2. _____

3. _____

NO. OF CYCLES: _____

TOTAL: _____

SEAR LIFT: _____

SEAR ENGAGEMENT: _____

TRIGGER PULL: 1. _____ 2. _____ 3. _____

OBSERVATIONS: SAFE ON FORCE

SAFE OFF FORCE

BOLT LIFT-COCKED

BOLT LIFT-FIRED

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(HARD WOOD BACK STOP - NEEDLE STOP - PAGE #1)

GUN #	SETUP	#6	#7	#8	#9			
W. POSITION	ON	OFF	ON	OFF	ON	OFF	ON	OFF
2 WOOD STOP	OK	OK	OK	OK	OK	OK	OK	OK
2 FEET NP	OK	OK	OK	OK	OK	OK	OK	OK
MUZZLE FIRST	OK	OK	OK	OK	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK	OK	OK	OK	OK
BUTT FIRST NP	OK	OK	OK	OK	OK	OK	OK	OK
HARD WOOD 2'	OK	OK	OK	OK	OK	OK	OK	OK
2 FOOT ONLY	OK	OK	OK	OK	OK	OK	OK	OK
RIGHT SIDE NP	OK	OK	OK	OK	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK	OK	OK	OK	OK
LEFT SIDE NP	OK	OK	OK	OK	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK	OK	OK	OK	OK
4 FEET	OK	OK	OK	OK	OK	OK	OK	OK
MUZZLE FIRST NP	OK	OK	OK	OK	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK	OK	OK	OK	OK
BUTT FIRST NP	OK	OK	OK	OK	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK	OK	OK	OK	OK
4 FT SIDE NP	OK	OK	OK	OK	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK	OK	OK	OK	OK
LEFT SIDE NP	OK	OK	OK	OK	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK	OK	OK	OK	OK
6 FEET	OK	OK	OK	OK	OK	OK	OK	OK
MUZZLE FIRST NP	OK	OK	OK	OK	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK	OK	OK	OK	OK
BUTT FIRST NP	OK	OK	OK	OK	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK	OK	OK	OK	OK
RIGHT SIDE NP	OK	OK	OK	OK	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK	OK	OK	OK	OK
LEFT SIDE NP	OK	OK	OK	OK	OK	OK	OK	OK
TOP 2'	OK	OK	OK	OK	OK	OK	OK	OK
RESULTS BOTTOM	OK	OK	OK	OK	OK	OK	OK	OK

TOP	OK	OK	OK	OK	OK	OK	OK
BOTTOM	OK	OK	OK	OK	OK	OK	OK
TOP	OK	OK	OK	OK	OK	OK	OK
BOTTOM	OK	OK	OK	OK	OK	OK	OK

* NOTE #6 SET UP AT .015" ENG. & 3 LBS TRIG PULL
OK AT ALL DROPS TILL TOP & BOTTOM AT 4' ON HARD WOOD
THEN TARS OFF BOTH WAYS.
ALSO TARS OF AT 6' ON TOP W/ NEED. BACK.

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(HARD WOOD BACK STOP) NEOPRENE STOP - PAGE #2

Run #	8-6341922 #6	8-635074 #7	8-635848 #8	8-6817650 #9
APPE POSITION	ON	OFF	ON	OFF
HARD WOOD STOP	OK	OK	OK	OK
2 FEET NP	OK	OK	OK	OK
MUZZLE FIRST	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK
BUTT FIRST NP	OK	OK	OK	OK
HARD WOOD 2'	OK	OK	OK	OK
2 FEET ONLY	OK	OK	OK	OK
RIGHT SIDE NP	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK
LEFT SIDE NP	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK
4 FEET	OK	OK	OK	OK
MUZZLE FIRST NP	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK
BUTT FIRST NP	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK
INT SIDE NP	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK
LEFT SIDE NP	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK
6 FEET	OK	OK	OK	OK
MUZZLE FIRST NP	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK
BUTT FIRST NP	OK	OK	OK	OK
*HARD WOOD	OK	OK	OK	OK
RIGHT SIDE NP	OK	OK	OK	OK
HARD WOOD	OK	OK	OK	OK
LEFT SIDE NP	OK	OK	OK	OK
TOP 2'	OK	OK	OK	OK
RESULTS BOTTOM	OK	OK	OK	OK

NEOPRENE STOP IN RED
HARD WOOD STOP IN BLACK

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	NEOPRENE RED HARD WOOD BLACK (4.25 T.P.) #5		(4.25 T.P.) #7		(3.5 T.P.) #8		(T.P.) (4.5 T.P.) #9	
4' TOP	OK	OK	OK	OK	OK	OK	OK	OK
BOTTOM	OK	OK	OK	OK	OK	OK	OK	OK
6' TOP	OK	JO	OK	JO	OK	OK	OK	JO
BOTTOM	OK	OK	OK	OK	OK	OK	OK	OK

*NOTE #6 SET UP AT .05" ENG. + 3 LB TRIG PULL
OK AT ALL DROPS TILL TOP + BOTTOM AT 4' ON HARD WOOD
THEN JARS DEE BOTH WAYS.
ALSO JARS OF AT 6' IN TOP W/ NEO. BACK.

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A

B

C

D



PD

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(NEOPRENE BACK STOP)

PAGE #1

SET #	B-6341922		B-6350761		A-6338848		A-6817650	
IN #	#6		#7		#8		#9	
OFF POSITION	ON	OFF	ON	OFF	ON	OFF	ON	OFF
NEOPRENE STOP								
- 2 FEET -								
MUZZLE FIRST	OK	OK	OK	OK	OK	OK	OK	OK
BUTT FIRST	OK	OK	OK	OK	OK	OK	OK	OK
RIGHT SIDE	OK	OK	OK	OK	OK	OK	OK	OK
LEFT SIDE	OK	OK	OK	OK	OK	OK	OK	OK
- 4 FEET -								
MUZZLE FIRST	OK	OK	OK	OK	OK	OK	OK	OK
BUTT FIRST	OK	OK	OK	OK	OK	OK	OK	OK
RIGHT SIDE	OK	OK	OK	OK	OK	OK	OK	OK
LEFT SIDE	OK	OK	OK	OK	OK	OK	OK	OK
- 6 FEET -								
MUZZLE FIRST	OK	OK	OK	OK	OK	OK	OK	OK
BUTT FIRST	OK	OK	OK	OK	OK	OK	OK	OK
WALDWOOD							OK	OK
RIGHT SIDE	OK	OK	OK	OK	OK	OK	BROKE BUT 11.	X OK
LEFT SIDE	OK	OK	OK	OK	OK	OK	OK	OK
WTS								

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DON'T SAY IT-WRITE IT

To _____ Location _____
From _____ Location _____ Phone No. _____
Subject SM-46-2-10.00 Date _____

#6 - B6341922

WR # 820391

#7 - B-6350761

W.O.C/802-000

#8 - A-6338848

#9 - A-6817650

(~~TITLE~~) M/200 NEW DESIGN TRIGGER SCREW AND SPRING ~~EVALUATION~~
PENDULUM DROP TEST EVALUATION
- TRIGGER SCREW AS PER DWG # SK-B-3688
- TRIGGER SCREW SPG. " " " " # SK-A-3687

G-88 REV. 10-62

SECURITY IS EVERYONE'S RESPONSIBILITY

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TEST LAB

10

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J. J. FLUNKEN
KINZER #820391
M700 NEW DESIGN TRIGGER SCREW-SPG. FIVE.
W.O. C-1802-000