cc: [illegible] Leek
C. R. Morse
~~R. R. Walker~~
J. W. Brooks
~~R. J. Wakerman~~
R. P. Kelly

Ilion, New York
June 23, 1966

MEMORANDUM

TO: C. B. Workman

FROM: A. A. Hagiak

DROP TESTING OF MODEL 600 POWDER METAL SEARS

The enclosed drop test procedure was organized and conducted using the M/600 with one piece powder metal sears. Drop testing at ten inches corresponds to the test manual standard and waist high drop testing (45") was included for increasing drop test severity. A sample of chrome plate powder metal sears produced to date was included for drop test purposes. Sears numbered 1 thru 5 are old style sears with the large .003+ inch radius at the connector surface edge. Sear numbered 6 thru 8 are new sears with .002± inch radius at the connector surface edge.

Fire control adjustments were made by production prior to drop testing.

Listed below are M/600 powder metal sear drop test observations:

1. The measured RC hardness of the new PM samples was 45 RC average versus 50 RC average for old samples.
2. No malfunctions were experienced at the normal drop height of 10".
3. Page 2 contains listed jar-off malfunctions encountered during the waist high M/600 drop testing. These high drop malfunctions are similar to prior test results of May 1966 special "Jar-Off" testing.
4. Tight sear pin holes of the new sears were polished out prior to drop testing.
5. Minor chipping of the sear connector edge of the old sear was noticed when examined with a 20X glass.

RECOMMENDATION

Based on M/700 and M/600 chrome plated powder metal sear testing, the new chromed powder metal sears should be considered for use in the M/600.

AAH:s
Enc.

PLAINTIFF'S EXHIBIT
3363

AL 0030562

REMINGTON ARMS COMPANY, INC.

ENGINEERING DEPARTMENT COMPUTATION SHEET

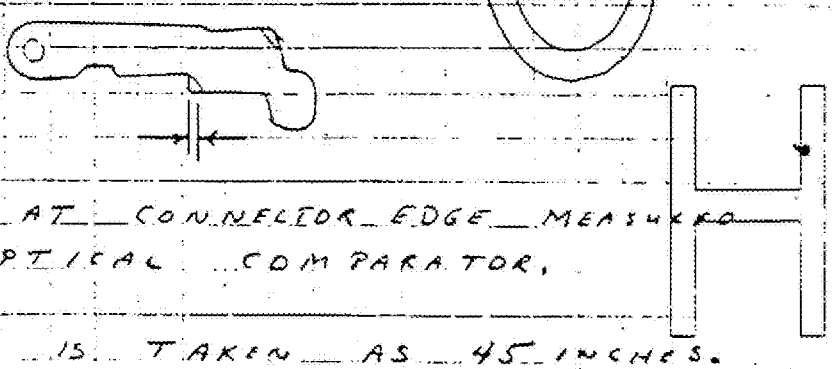
1

M600 POWDER METAL SEAR

CHROME PLATED POWDER METAL SEAR

DATA FOR DROP TESTING COMPUTED BY AAH. 6-9-66

SEAR NUMBER.	TOTAL NUMBER OF DRY CYCLES	SEAR RADIUS AT CONNECTOR EDGE	SEAR COMPONENT WEIGHT & HARDNESS	AVE. TRIG. PULL AT BEGINNING AND END OF TEST
1	0	.0034	9.3900 gr. 48 RC SCALE	5.77 - 5.60
2	0	.0039	9.3705 gr. 51 RC SCALE	6.25 - 5.30
3	0	.0042	9.3655 gr. 53 RC SCALE	5.45 - 5.70
4	0	.0039	9.4176 gr. 51.5 RC SCALE	5.00 - 4.85
5	0	.004	9.4423 gr 53 RC SCALE	5.50 - 5.05
6	0	.0005"	9.5837 gr 44.5 RC SCALE	5.50 - 5.50
7	0	.000"	9.5182 gr. 46.5 RC SCALE	5.90 - 5.70
8	0	.0012	9.4955 grams 45.0 RC SCALE	5.25 - 5.50



SEAR RADIUS AT CONNECTOR EDGE MEASURED ON THE OPTICAL COMPARATOR.

WAIST HIGH IS TAKEN AS .45 INCHES.

296

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REMINGTON ARMS COMPANY, INC.

ENGINEERING DEPARTMENT — COMPUTATION SHEET — 2

M 600 POWDER METAL SEAR

DROP TEST RESULT WITH M600

PM. SEAR TESTING — BY AAH. — 6-14-66

TYPE OF SEAR TESTED	NUMBER OF FAILURES	DROP TEST STEP NO.	NUMBER OF SEARS TESTED	TEST GUN SERIAL NO.	COMMENTS
STANDARD PROD.	1	VI-2	2	20344	
STANDARD PROD.	1	VI-4	2	20344	
FIRST PM.	0		1		
LARGE CON. RAD.	1	VI-4	4	1167	
LAST SHARP SEARS	1	VI-3	3	1167	
LAST SHARP SEARS	1	VI-2	3	20344	

VI JAR OFF TEST

A. DROP GUN WAIST HIGH ON SOLID WOOD SURFACE WITH SAFETY OFF.

1. BUTT DOWN
2. MUZZLE DOWN
3. TOP SIDE DOWN
4. BOTTOM SIDE DOWN

B. TRIGGER SHALL BE TRIED AFTER EACH DROP TO DETERMINE WHETHER THE SAFETY HAS RELEASED ANY MECHANISM WHICH MAY ALLOW FIRING.

C. THREE DROPS PER POSITION.

"WAIST HIGH" IS TAKEN AS 45 INCHES.

CHRONOLOGICAL RECORD OF TESTING

MODEL & DESCRIPTION M/600 New P.M. [illegible]

CALIBER or ~~GAUGE~~ 308 (LATEST - SHARP)

DATE 6-3-66 TEST P.M. Sear Drop Test (re-test) TESTER J. Henninger PAGE NO.

barrels # [illegible] were used placing different sears in these two barrels only. (3 sears)

Test - I - Trigger pulls & firing pin indents (on sep. sheets)

Test - II - No malfunctions noticed.

Test - III - (butt down) sear #2 had a total of 3 drops in which the saftey was jarred to the "ON" pos.

Test - IV - No malfunctions noticed

Test - V - (muzzle down) sears # 1,2 & 3 had a total of 7 drops in which the saftey was jarred to the "OFF" pos.

Test - VI - (butt down) - sear # 1 - on all three drops the saftey was jarred to the "ON" pos.

(muzzle down) - sear # 3 on second drop gun fired.

top-side down - sear #2 on first drop gun fired

CHRONOLOGICAL RECORD OF TESTING

MODEL & DESCRIPTION M/600 New P.M. sears.

CALIBER ~~or GAUGE~~ 308 (LARGE RAD. SEAR

DATE 6-2-66 TEST P.M. Sear Drop Test TESTER T. Hennings PAGE NO.

Barrels #1 1167 + 2033M were used placing different sears in these two barrels only.

Test - I- Trigger pulls + firing pin indents (on sep. sheets)

Test - II- No malfunctions noticed

Test III- (muzzle down) - sears #1+2 had a total of 5 drops in which safety jarred to "ON" position.

Test - IV- No malfunctions noticed

Test - V- (butt down) - sears #1,2,3,4,5 had a total of 13 drops in which safety jarred to "OFF" position.

Test - VI- (muzzle down) - sears #2,3,4 had a total of 9 drops in which safety was jarred to "ON" Position.

(top side down) - sear #2 - on third drop hold jarred open.

(bottom side down) - sear #4 on second drop the jar fired the firing pin.

IE! ON BOTH ACTIONS- PIN HOLE WAS TIGHT CAUSING SEAR TO BIND.

586

AL 0030566

CHRONOLOGICAL RECORD OF TESTING

MODEL & DESCRIPTION m/600 std. sear drop test

CALIBER or GAUGE 308 PRESENT PRODUCTION (2 piece)

DATE	TEST	TESTER	PAGE NO.
6-12-66	66 L # 1167 + 20344 308 cal. m/600 dropped from various pos. with std. sear in fire-control		
	# 1167 all tests ok except Test V. muzzle-down waist high the safe jarred to "off" pos. on all 3 drops		
	# 20344 Tests I - IV - OK		
	Test V - (butt down / waist high) → safe jarred to "off" pos on all 3 drops		
	Test VI → (muzzle-down / waist high) on 1st drop gun fired		
	Test VII → (bottom-side down / waist high) - on 3rd drop gun fired		
	Test - VI → (butt down / waist high) → safe jarred to "on" pos on 3rd drop		

6 of 6