

Xc: <sup>L3</sup> J. P. Linde  
Lab File  
AAA  
L-3

**REMINGTON ARMS COMPANY, INC.**

INTER-DEPARTMENTAL CORRESPONDENCE



"CONFINE YOUR LETTER TO ONE SUBJECT ONLY" \_\_\_\_\_

Ilion, New York  
May 23, 1975

TO: W. E. LEEK  
FROM: A. A. HUGICK  
DATE: May 22, 1975  
SUBJECT: M/580 SERIES AND M/788 SAFETY EVALUATION REPORT #2  
TEST PERIOD: April 21, 1975 thru May 22, 1975

INTRODUCTION:

Part of the review of the bolt action rifle safety function included the M/580 and M/788 fire control systems. Three (3) M/580 and three (3) M/788 test rifles were delivered to the lab area for testing and evaluation. Test activity of these rifles was confined to wear function of the safety and fire control.

TEST OBJECTIVE:

Dry cycle test the sample M/580 and M/788 rifle safety assemblies for endurance and function.

TEST RESULTS & OBSERVATIONS

1. M/581 - 1199133 - Test Gun #13

- |               |   |
|---------------|---|
| Test Activity | <ul style="list-style-type: none"> <li>- Swaged safety for greater lift in Model Shop</li> <li>- 10,000 fired rounds of 22 Rim fire</li> <li>- 2,000 Safe On - Safe Off cycles.</li> <li>- WD40 lubrication - no loctite on screw</li> <li>- Pivot pin retaining washer was without a seal.</li> </ul>  |
| Test Results  | <ul style="list-style-type: none"> <li>- Safe On sear lift showed no change</li> <li>- Safe On Force was constant @ 6 lbs.</li> <li>- Safe Off Force was constant @ 2 lbs.</li> <li>- Trigger Pull was uniform around 4.25 lbs.</li> <li>- Parts inspection at end of test was made with parts appearing in a new like condition.</li> <li>- Function of the safe was normal and could not be tricked.</li> </ul> |

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TEST RESULTS & OBSERVATIONS (Cont'd)

2. M/581 - 1199141 - Test Gun #14

- |               |   |   |
|---------------|---|---|
| Test Activity | - | Swaged safety cam for greater lift.   |
|               | - | No locktite on safety retaining screw.  |
|               | - | No seals (duco) on safety pivot pin retaining washer.   |
|               | - | 50,000 Safe On - Safe Off cycles mixed with   |
|               | - | 50,000 cock and dry fire cycles.  |
|               | - | WD 40 lubrication.  |
|               | - | 540 Type sear   |
|               |   |   |
| Test Results  | - | Safe On sear lift showed no change.   |
|               | - | Safe On sear lift showed minor variations.  |
|               | - | Safe Off force was constant at 2.0 lbs.   |
|               | - | Safe On force averaged 5.0 lbs.   |
|               | - | Safe On force had 2.0 lb. variation.  |
|               | - | Striker cross pin retaining striker-to-cocking<br>piece has failed and slipped one half the hole<br>with roll pin structure collapsing. |
|               | - | Safety pivot pin shows wear due to pivoting of<br>the safety during dry cycle testing.  |

3. M/581 - 1199658 - Test Gun #15

- |               |   |  |
|---------------|---|--|
| Test Activity | - | Model Shop swaged safety cam for greater sear lift.  |
|               | - | 42,500 Safe On - Safe Off cycles mixed with  |
|               | - | 42,500 cock and dry fire cycles.   |
|               | - | WD 40 lubrication.   |
|               | - | Dropping of the rifle not in the stock resulted in<br>failure of the fire control housing stud.              |
|               |   |  |
| Test Results  | - | Safe On sear lift showed a decrease from .020 as<br>received-to .017 inch at 40,000 / 40,000 cycle<br>level. |
|               | - | Safe Off force was fairly uniform at 1.5 - 2.0 lbs.  |
|               | - | Safe On force varied and decreased from 10 lbs. to<br>6.0 lbs. at end of testing.                            |
|               | - | Trigger pull averaged around 5.5 lbs.  |
|               | - | Safe function was normal and could not be tricked.   |
|               | - | Safety retaining screw was loose two turns.  |

4. M/788 - 6047677 - Test Gun #5      22/250 Cal.

- |               |   |  |
|---------------|---|--|
| Test Activity | - | Swaged safety cam for greater lift in Model Shop.            |
|               | - | 2,000 fired rounds in jack.                                  |
|               | - | 500 Safe On - Safe Off cycles.                               |
|               | - | WD 40 lubrication in fire control.                           |
|               | - | An inspection hole was made in the housing for<br>measuring. |

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TEST RESULTS & OBSERVATIONS (Cont'd)

4. (Cont'd)

- Test Results
- Safe On sear lift had a minor variation of .0008 inch and a minor increase from .015 as received-to-.0153 inch.
  - One case head seperation occurred at 830 round level - headspace min. 003.
  - The locktite safety retaining screw remained tight in this test.
  - Housing lock screw required frequent tightening. (for function and measuring).

5. M/788 - 6047656 - Test Gun #12

- Test Activity
- Model Shop swaged safety cam for greater lift.
  - 50,000 cock and dry fire cycles.
  - 50,000 Safe On - Safe Off cycles
  - WD 40 lubrication.
  - R&D locktite of safety retaining screw
  - Inspection hole drilled in housing.
- Test Results
- Safe on sear lift decreased from .0143 as received to .0091 at end of test.
  - Safe On sear lift variations were in the order of .002.
  - Safe On force average around 5.5 lbs.
  - Safe Off force averaged around 2.0 lbs.
  - Safety retaining screw with locktite remained tight.
  - Sear at sear-to-cocking piece contact area is broken down.
  - Safety pivot pin show slight wear at Safe due to pivoting action.
  - Operation of safe was normal in this dry cycle testing.

6. M/788 - 6047703 - Test Gun #21

- Test Activity
- Model shop swaged safety cam for greater lift.
  - 42,500 safe On - Safe Off cycles
  - 42,500 cock and dry fire cycles.
  - WD 40 lubrication
  - Inspection hole drilled/and or safe modified for inspection.
  - R&D locktite applied to safety retaining screw.

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TEST RESULTS & OBSERVATIONS (Cont'd)

6. (Cont'd)

- Test Results
- At 10,000 Safe On - Safe Off plus 20,000 cock and dry fire cycles the sear pin moved - this movement allowed the gun to be fired with the safe.
  - Sear pin (solid type) was reposition for additional test.
  - At 50,000 cock and dry fire cycles plus 40,000 Safe On - Safe Off cycles Safe On sear lift was zero. Note photo of cam failure.
  - The sear at the sear-to-cocking piece is breaking down.

AAH:bd  
Measurement/Test Lab  
Illion Research Division  
Attached