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RESEARCH TEST AND MEASUREMENT REPORT

REPORT# 843631

MODEL 700 CLASSIC 350 REM. MAG. PROTOTYPE EVALUATION

MODEL 700 CLASSIC 350 REM. MAG. PROTOTYPE EVALUATION

ABSTRACT:

The Test and Measurement Lab finds the Prototype Evaluation of the Model 700 Classic 350 Rem. Mag., to be acceptable. There were no breakages or malfunctions related to the introduction of the 350 Rem. Mag. caliber in the Model 700 Classic rifle.

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Date Prepared: 1/18/85

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MODEL 700 CLASSIC 350 REM. MAG. PROTOTYPE EVALUATION

TO: R.E. NIGHTINGALE
FROM: F.L. SUPRY

TITLE: MODEL 700 CLASSIC 350 REM. MAG. PROTOTYPE EVALUATION

INTRODUCTION:

On December 28, 1984 a request to conduct a Prototype Evaluation of the Model 700 Classic Rifle, chambered in the 350 Rem. Mag. caliber, was received by the test lab. The Prototype Evaluation was to consist of: Proof, Live load/unload, Field Function, Accuracy, and Ultimate Strength. Eleven (11) rifles, from a sample of eleven (11) rifles were to be utilized in the evaluation.

SCOPE OF TEST:

To determine if the Prototype samples meet Remington Specifications set by the Research Design Section, prior to the transmittal of the design to production.

TEST RESULTS:

The Prototype rifles were found to meet specfications set by Research, for each phase of the test. The sample lot was found to be acceptable, and the designs were transmitted to production.

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REPORT TEXT:

1. PROOF:

   A. All eleven (11) rifles were found to be acceptable.

2. LIVE LOAD/UNLOAD:

   A. Rifle # B6324331 experienced two (2) "fail to eject" malfunctions.

   B. There was no bullet deformation, resulting from the Live load/unload test.

3. FIELD FUNCTION:

   A. Ten (10) rifles were subjected to a thirty (30) round per rifle, Field Function Test and the following results were obtained:

      a. Nine (9) rifles experienced no malfunctions.
      b. Rifle # B6324331 experienced eleven (11) "fail to eject" malfunctions.
         i. Upon examination of this rifle, it was determined to have a weak ejector spring.

4. ACCURACY:

   A. Five (5) rifles were tested for 100 yard accuracy and the following average was established:

      a. Group Size: 2.08 inches

   B. Accuracy results per individual rifle are located in the appendix of this report.

5. ULTIMATE STRENGTH:

   A. Rifle # B6357123 was found to be acceptable, when subjected to the firing of a high pressure round (approximately 125,000 psi).

      a. The bolt jammed in the chamber and was opened by using a mallet.
      b. The barrel took a 200 ui/i set. (Refer to appendix for graph)

   B. Rifle # B6324792 was found to be acceptable, when subjected to an obstructed bore and fired with a high pressure round (approximately 125,000 psi).

      a. The bolt jammed and had to be cut from the chamber.
      b. The barrel was returned to F.H. Smith.

MODEL 700 CLASSIC 350 REM. MAG. PROTOTYPE EVALUATION

TEST PROCEDURE:

1. PROOF:

   A. The rifles were proofed, inspected, and stamped in the Plant Gallery by experienced Gallary personnel.

2. LIVE LOAD/UNLOAD:

   A. Ten of the rifles were subjected to the loading and function, without firing, of fifty (50) 200 gr. PSP and fifty (50) 250 gr. SP Remington ammunition.

      a. The test was conducted in Shooting Room 112, Booth #3.

      b. Slow, Medium, and Fast cycle speeds were utilized.

3. FIELD FUNCTION:

   A. Ten (10) of the rifles were subjected to the loading and firing of thirty (30) rounds of Remington ammunition. The round robin method of firing the rifles was used. Fifteen (15) rounds were fired; five (5) at a slow feeding cycle speed, five (5) at a medium feeding cycle speed, and five (5) at a fast feeding cycle speed. The rifles were then cooled before the firing of the next ammunition type.

   B. The following ammunition was used in the field test:

      a. Remington: R350M1 200-psp code# M02G
                    250- sp (Not Available)

   C. All malfunctions were recorded; per rifle, per ammunition type, per feeding cycle speed, and per shooter. Individual and overall malfunction rates were calculated.

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4. ACCURACY:

A. The following five (5) rifles were used in the 100 yard accuracy test:

B6324806 B6324310 B6356446
B6354679 B634611

B. The accuracy was shot by J. Selan, Research - Test Lab, at the R & D 100 yard range.

C. Leupold mounts and rings were used in conjunction with a Leupold 24X scope.

D. Remington Peters ammunition, index R350M1 ; code MO2G, 200 grain pointed soft point, was used for the 100 yard accuracy test.

E. Before shooting the 100 yard accuracy test, the bores on each rifle were brushed with Hoppe's No. 9 solvent and patched dry.

F. A total of three (3), five (5) shot groups were shot with each rifle. The rifles were cooled between each group, and one (1) "warmer" shot was fired before the next group was shot.

G. The patterns were analyzed for group size. An average was calculated for each rifle.

5. ULTIMATE STRENGTH:

A. The following two rifles were used for Ultimate Strength:

a. B6357123 - unobstructed bore - high pressure load

i. 56.5 grains - 4198 powder - 250 grain bullet

b. B6324792 - obstructed bore - high pressure load

i. 56.5 grains - 4198 powder - 250 grain bullet
ii. Bore obstructed with a 250 grain bullet

B. The Ultimate Strength Test was conducted by C. Stephens, Research - Measurement Lab.

a. Each rifle was placed in an iron lung, and fired with a lanyard.

b. A strain gauge was attached to rifle # B6357123.

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APPENDIX.

MODEL 700 CLASSIC 350 REM. MAG. PROTOTYPE EVALUATION

MODEL 700 CLASSIC 350 REM. MAG.
AMMO: 200 GRAIN PSP "CORE-LOKT" CODE: MO2G PETERS
3 X 5 SHOT GROUPS: COOL BETWEEN GROUPS - FIRE ONE "WARMER" SHOT
LEUPOLD 24X SCOPE 100 YARDS

RIFLE NUMBER	GROUP 1 (IN.)	GROUP 2 (IN.)	GROUP 3 (IN.)	AVERAGE (IN.)
B6324806	0.79	1.46	2.30	1.52
B6356446	2.30	2.08	2.50	2.29
B6324310	1.94	1.90	2.26	2.03
B6354679	1.78	2.08	2.80	2.22
B6324611	1.94	2.34	2.80	2.36

AMMO CONFORMATION: 5 X 5 SHOT GROUPS 100 YARDS
350 REM. MAG. "PETERS" 200 GRAIN "CORE-LOKT" CODE: MO2G
RIFLE: 40XB SERIAL# 17793 SCOPE: LYMAN 25X SUPER TARGET

GROUP 1 (IN.)	GROUP 2 (IN.)	GROUP 3 (IN.)	GROUP 4 (IN.)	GROUP 5 (IN.)	AVERAGE (IN.)
1.22	0.88	1.28	1.70	1.28	1.27

.350 REM MAG-56.5 GR 4198
[1.0E-03sec /div]
TIME
BBL STRAIN
[1.5E+02Ui/i /div]
R.FLE # B635723