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RESEARCH TEST AND MEASUREMENT REPORT

REPORT# 902271
W.O.# 481152
NOVEMBER 5, 1990

MODEL 700 7x64 CALIBER DESIGN ACCEPTANCE

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MODEL 700 7x64 CALIBER DESIGN ACCEPTANCE

ABSTRACT:

Research and Development finds the Design Acceptance Evaluation of the Model 700 rifle in 7x64 caliber to be acceptable. The evaluation consisted of Accuracy, Field Function and High Pressure Strength.

Prepared by: D.R. Thomas
Date Prepared: November 5, 1990

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TO: J.R. Snedeker
FROM: D.R. Thomas

INTRODUCTION:

In August of 1990 a request to conduct a Design Acceptance Evaluation of the Model 700 Rifle in 7x64 caliber was received by the Test Lab. The evaluation used six rifles and consisted of Accuracy, Field Function and High Pressure Strength.

SCOPE OF THE TEST:

To determine if the 7x64 caliber sample would meet the Remington Specifications for accuracy, field function and strength.

TEST RESULTS:
ACCURACY:

The average group size was 1.79 inches well within the 3.2 inch specification.

FIELD FUNCTION:

Six rifles were each field tested with 100 rounds of Norma 150 gn. ammunition. There were no malfunctions in the 600 rounds fired.

STRENGTH:

One rifle with a plugged bore was subjected to a high pressure round. The resulting damage was typical of all Model 700 rifles subjected to this test.

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REPORT TEXT:

GENERAL:

The following six rifles were used for the Design Acceptance Evaluation:

C6563003 C6562997 C6563032 C6562914 C6563108 C6562918

ACCURACY:

All six rifles were used in the accuracy test.

Norma 7X64, 150gn. Soft Point No. 17013, lot# 02723 was used for accuracy testing.

A Lyman "All American" 20X scope was used.

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

FIELD FUNCTION:

All six rifles were used in the Field Function Test.

The rifles were fired 100 rounds each in the Field Function Test conducted at the Ilion Fish and Game Club.

Norma 7X64, 150 gn. Soft Point No. 17013, lot# 02723 was the only ammunition available for field testing.

STRENGTH:

Rifle C6562918 was used for the high pressure strength test.

The high pressure load consisted of 50gns. of 4227 powder and a 175 gn. bullet.

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TEST PROCEDURE:

ACCURACY:

Three, five shot groups were shot with each of the six rifles. The accuracy was shot by J.E. Selan in the Research and Development 100 yard range located in building 52-1A.

Norma 150 gn. soft point ammunition code 17013 lot# 02723 was used for the accuracy testing.

Standard long action Leupold bases and rings were used in conjunction with a 20X All-American Lyman scope.

The targets were analyzed for group size using the HP 9000 computer and digitizing tablet.

FIELD FUNCTION:

The rifles were subjected to the loading and firing of 100 rounds of Norma 150 gn. soft point ammunition in a field function test conducted at the Ilion Fish and Game Club.

A round robin method of shooting, alternating shooters every ten rounds, was used throughout the field function testing.

The guns were allowed to air cool every 20 rounds.

STRENGTH:

Four bullets were lodged in the bore of rifle # C6562918.

A high pressure round was developed using the reloading and P&V facilities.

The high pressure round was fired in the "Iron Lung" in the measurement lab.

Estimated pressure for the destructive load fired in an unobstructed Barrel is 130,000 psi. Pressure generated in the plugged bore is much higher.

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APPENDIX

100 YARD ACCURACY RESULTS

| <u>SERIAL NUMBER</u> | GROUP 1 (in.) | GROUP 2 (in.) | GROUP 3 (in.) | AVERAGE (in.) |
|----------------------|------------------|------------------|------------------|------------------|
| C6563032 | 0.94 | 1.83 | 1.61 | 1.46 |
| C6562918 | 1.87 | 1.90 | 1.98 | 1.92 |
| C6563108 | 2.26 | 2.19 | 1.85 | 2.10 |
| C6563003 | 1.51 | 2.68 | 1.60 | 1.93 |
| C6562914 | 2.11 | 1.80 | 1.33 | 1.75 |
| C6562997 | 2.03 | 1.27 | 1.41 | 1.57 |

overall average = 1.79