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RESEARCH TEST AND MEASUREMENT REPORT

REPORT# 890201
W.O.# 481152
FEBRUARY 27, 1989

MODEL 700 CLASSIC 300 SAVAGE CALIBER DESIGN ACCEPTANCE

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ABSTRACT:

Research and Development finds the Design Acceptance Evaluation of the Model 700 Classic rifle in 300 Savage caliber to be acceptable. The evaluation consisted of Accuracy, Field Function and High Pressure Strength. A problem, not design related, was found in the six rifle sample, provided by F.E.Martin. When the problem was corrected the sample was found to be within Remington specifications for each phase of the Design Acceptance Evaluation.

Prepared by: D.R. Thomas
Date Prepared: February 27, 1989

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J.R. Snedeker 3/5/89
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MODEL 700 CLASSIC 300 SAVAGE CALIBER DESIGN ACCEPTANCE

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

INTRODUCTION:

In February of 1989 a request to conduct a Design Acceptance Evaluation of the Model 700 Classic Rifle in 300 Savage 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 300 Savage caliber sample would meet the Remington Specifications for accuracy, field function and strength.

TEST RESULTS:

ACCURACY:

The average group size was 1.73 inches well within the 3.5 inch specification.

FIELD FUNCTION:

The rifles failed the first Field function test with a 41% malfunction rate. It was discovered that three of the rifles had Bolts with the Ejector Retaining Pin Hole out of position. This caused an extremely high rate of "Ejector drops shell" malfunctions in these three guns. When the bolts were replaced and the Field Function shot again, there were no malfunctions.

STRENGTH:

One rifle with a plugged bore was subjected to a high pressure round. The resulting damage was typical of all caliber 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:

B6772505 B6772494 B6772508 B6685216 B6323372 B6772464

ACCURACY:

Five rifles were used in the accuracy test.

Remington 150gn. PSP "CORE-LOKT" Code R30SV2 Lot # J18D-C6805 was used for accuracy.

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 first Field Function Test. One of the rifles was used for the Strength Test before the second Field Function Test. Five rifles were used for the second Field Function Test.

The rifles were fired 70 rounds each in each of the Field Function Tests conducted at the Ilion Fish and Game Club.

The following ammo types were used in the Field Function Testing:

Remington R30SV3 & R30SV2
Federal 300A & 300B
Winchester X3001, X3003 & X3004

FIRST FIELD FUNCTION

Two of the rifles experienced no malfunctions.
Rifle B6772505 had three doesn't eject malfunctions.
Rifle B6772494 had 65 ejector drops shell malfunctions.
Rifle B6685216 had 24 ejector sticks back malfunctions.
Rifle B6323372 had 55 doesn't eject malfunctions.

FIELD FUNCTION AFTER ALL BOLTS WERE REPLACED

All five remaining rifles were fired 70 rounds each without a malfunction.

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REPORT TEXT: (cont.)

STRENGTH:

Rifle B6685216 was used for the high pressure strength test.

TEST PROCEDURE:

ACCURACY:

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

Remington ammunition code R30SV2 lot# J18D-C6805 was used for the accuracy testing.

Standard short 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 70 rounds of Remington and competitive 300 Savage ammunition in a field function test conducted at the Ilion Fish and Game Club. A round robin method of shooting, alternating shooters and ammunition types every ten rounds, was used throughout the field function testing.

STRENGTH:

Four bullets were lodged in the bore of rifle B6685216.

A high pressure round was developed by C. Stephens using the reloading and P&V facilities. The high pressure load consisted of 40gns. of 4227 powder and a 180gn. bullet. The high pressure round was fired in the "Iron Lung" in the measurement lab.

Estimated pressure for the destructive load was 210,000 psi.

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APPENDIX

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100 YARD ACCURACY RESULTS

<u>SERIAL NUMBER</u>	GROUP 1 (in.)	GROUP 2 (in.)	GROUP 3 (in.)	AVERAGE (in.)
B6772464	2.244	1.709	2.508	2.15
B6772494	1.337	1.799	1.777	1.64
B6772505	1.805	2.530	1.298	1.81
B6772508	1.141	1.426	1.720	1.43
B6323372	1.881	1.397	1.603	1.63

overall average = 1.73