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RESEARCH TEST AND MEASUREMENT REPORT

REPORT# 890611
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MARCH 30, 1989

MODEL 700 RIFLE ARYLON STOCK 22-250 CALIBER
TRIAL AND PILOT EVALUATION

Report# 890611

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Work Order# 481152

MODEL 700 RIFLE ARYLON STOCK 22-250 CALIBER
TRIAL AND PILOT EVALUATION

ABSTRACT:

Research and Development finds the Trial and Pilot Evaluation of the Model 700 Arylon Stock rifles in 22-250 caliber to be acceptable. The Trial and Pilot Evaluation consisted of Visual Inspection, Field Function and Accuracy. The 10 rifle sample, randomly selected from the Iliion warehouse, was found to be within Remington specifications for each phase of the Trial and Pilot Evaluation.

Prepared by: D.R. Thomas
Date Prepared: March 30, 1989

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James R. Sneaker 30/3/89
1989
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MODEL 700 RIFLE ARYLON STOCK 22-250 CALIBER
TRIAL AND PILOT EVALUATION

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

INTRODUCTION:

On March 2, 1989 a request to conduct a Trial and Pilot Evaluation of the Model 700 Arylon Stock, 22-250 caliber, rifles was received by the Test Lab. The evaluation was based on 10 rifles randomly selected from the Ilion warehouse, and consisted of Visual Inspection, Field Function, and Accuracy at ambient, cold and hot temperatures.

SCOPE OF THE TEST:

To determine if the production run sample would meet the Remington Specifications set by the Research Design Section.

TEST RESULTS:

The production sample of the Model 700 Arylon Stock Rifles in 22-250 caliber was found to be acceptable in all phases of the Trial and Pilot Evaluation. The results of each phase of testing are as follows:

VISUAL:

The overall appearance of the rifles was good.

ACCURACY:

Remington specification for accuracy is 2.2 inches. The average group sizes for the Model 700 Arylon in 22-250 are as follows:

AMBIENT	1.31 inches
+150° F	1.35 inches
-22° F	1.41 inches

FIELD FUNCTION:

Eight of the ten rifles tested functioned with no malfunctions. Two of the ten rifles each had one feeding malfunction out of forty rounds of field testing for a 2.5% malfunction rate. The overall malfunction rate for the Field Function test is .5%.

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REPORT TEXT:

GENERAL:

The following ten rifles were randomly selected from the Ilion warehouse for the Trial and Pilot Evaluation:

C6358617	C6360604	C6360424	C6360603	C6360321
C6360504	C6360496	C6360594	C6360617	C6360464

VISUAL INSPECTION:

The visual inspection committee finds the overall visual appearance of the Trial and Pilot sample to be acceptable.

The visual inspection committee consisted of J.E. Selan, L.B. Bosquet, R.F. Leskovar, and D.R. Thomas.

All ten of the rifles were used in the Visual Inspection.

Comments on each rifle are located in the appendix.

FIELD FUNCTION:

All ten of the rifles were fired 40 rounds each in a field function test conducted at the Ilion Fish and Game Club.

The following ammunition types were used in the field function test:

Remington	R22501
Remington	R22502
Winchester	X222501
Federal	P22250B

The following rifles were shot 40 rounds each with no malfunctions:

C6360594	C6360603	C6360321	C6360496
C6360504	C6360604	C6360424	C6358617

Rifle # C6360617 was shot 40 rounds and had one "bolt override" with R22502 for a 2.5% malfunction rate.

Rifle # C6360464 was shot 40 rounds and had one "stems chamber low" with R22501 for a 2.5% malfunction rate.

The overall malfunction rate for the sample is .5%.

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REPORT TEXT: (cont.)

ACCURACY:

The results showed that the Model 700 Arylon Rifles, 22-250 caliber, met the Remington specification (2.2 inches) for group size.

The following five rifles were used in the accuracy test:

C6360496 C6360464 C6360504 C6360594 C6360424

Remington ammunition code R22501 (22-250 PSP) lot# T21H D3710 was used for the accuracy testing.

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

Remington specification for accuracy is 2.2 inches. The average group sizes for the Model 700 Arylon in 22-250 are as follows:

AMBIENT	1.31 inches
+150° F	1.35 inches
-22° F	1.41 inches

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

TEST PROCEDURE:

VISUAL INSPECTION:

All ten rifles were examined.

Each rifle was wiped down with a clean white Coyne towel and examined by each committee member. All comments were recorded.

FIELD FUNCTION:

All ten rifles were subjected to the loading and firing of 40 rounds 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.

Each of the ten guns had ten rounds each of R22501, R22502, X222501, and P22250B ammunition shot through it.

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ACCURACY:

The accuracy was shot by J.E. Selan in the Research and Development 100 yard range located in building 52-1A.

At room temperature, three, five shot groups were shot with each of the five rifles selected for 100 yard accuracy.

The five rifles were placed in an oven for 24 hours at 150 Degrees Fahrenheit, then removed and allowed to return to room temperature. At this time the 100 yard accuracy test was reshot.

The five rifles were placed in a freezer for 24 hours at -22 Degrees Fahrenheit, then removed and allowed to return to room temperature. At this time the 100 yard accuracy was reshot.

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

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APPENDIX

MODEL 700 RIFLE ARYLON STOCK 22-250 CALIBER
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VISUAL INSPECTION:

GENERAL COMMENTS:

The appearance of the 22-250 caliber, Model 700 Rifles, with Arylon stocks was good.

There were no visual defects severe enough to reject the sample however, the following items were noted in the visual inspection:

All stocks have a seam or parting line.

COMMENTS PER INDIVIDUAL RIFLE:

C6358617	Glue on grip cap Space between grip cap and stock Mold line on stock
C6360604	Glue on grip cap Slight mar on barrel Space between butt pad and stock
C6360424	Poor fit butt pad Paint chipped from floor plate
C6360603	1/8 inch margin at tang Poor fit butt pad Paint chipped around take down screws
C6360321	Poor fit butt pad Slight gouge front of bolt handle slot
C6360504	Poor fit butt pad Flashing rear of bolt handle slot Poor color bow of trigger guard
C6360496	Poor fit butt pad Slight mar on bolt plug Slight crush right side of barrel channel
C6360594	Glue on grip cap Barrel off center in groove Upset on bolt handle where it contacts cam surface
C6360464	Flashing rear of bolt handle slot
C6360617	Gouge in bolt handle slot

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100 YARD ACCURACY RESULTS
(Remington specification 2.2 inches)

AMBIENT

<u>SERIAL NUMBER</u>	GROUP 1 (in.)	GROUP 2 (in.)	GROUP 3 (in.)	AVERAGE (in.)
C6360496	.988	1.566	1.284	1.28
C6360464	1.190	1.722	1.166	1.36
C6360504	1.096	1.771	1.465	1.44
C6360594	.837	1.454	1.343	1.21
C6360424	1.522	1.540	.669	1.24
<u>AVERAGE 1.31</u>				

150° F

<u>SERIAL NUMBER</u>	GROUP 1 (in.)	GROUP 2 (in.)	GROUP 3 (in.)	AVERAGE (in.)
C6360496	1.412	1.257	1.672	1.45
C6360464	1.034	1.174	1.501	1.24
C6360504	.997	1.034	1.422	1.15
C6360594	1.417	1.775	1.606	1.60
C6360424	.765	1.949	1.161	1.30
<u>AVERAGE 1.35</u>				

-22° F

<u>SERIAL NUMBER</u>	GROUP 1 (in.)	GROUP 2 (in.)	GROUP 3 (in.)	AVERAGE (in.)
C6360496	1.307	1.237	1.697	1.41
C6360464	1.804	1.632	1.177	1.54
C6360504	.643	1.574	1.310	1.18
C6360594	1.835	2.080	1.292	1.74
C6360424	1.052	1.330	1.114	1.17
<u>AVERAGE 1.408</u>				