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H. P. WHITE LABORATORY, INC.
EST. 1936

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Williams v. Remington

HPWLI 6793-02

TEST REPORT

EXTREME ENVIRONMENT, RELIABILITY
TESTING OF MODIFIED MODEL 700,
RIFLE, FIRE CONTROL ASSEMBLIES

Prepared For

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October 1995

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PREFACE

This report presents the results of Extreme Environment Testing of modified, Model 700 Rifle Fire control Assemblies comparatively with currently fielded, Model 700 Rifle Fire Control Assemblies. The tests were conducted in accordance with Remington Arms Company, Inc. Purchase Order Number LRR-0792.

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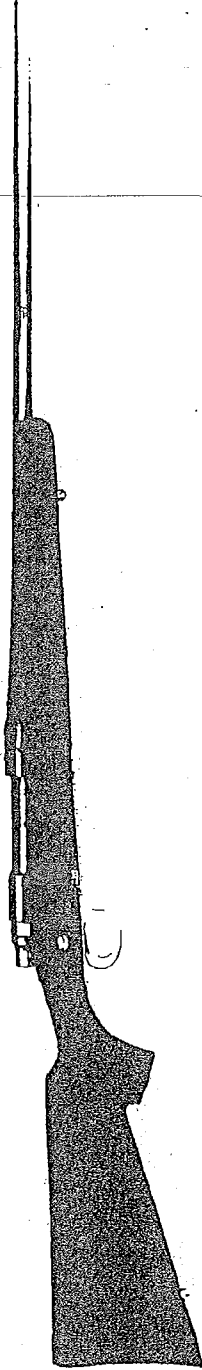


Figure 01. Remington Model 700,
Bolt Action Rifle

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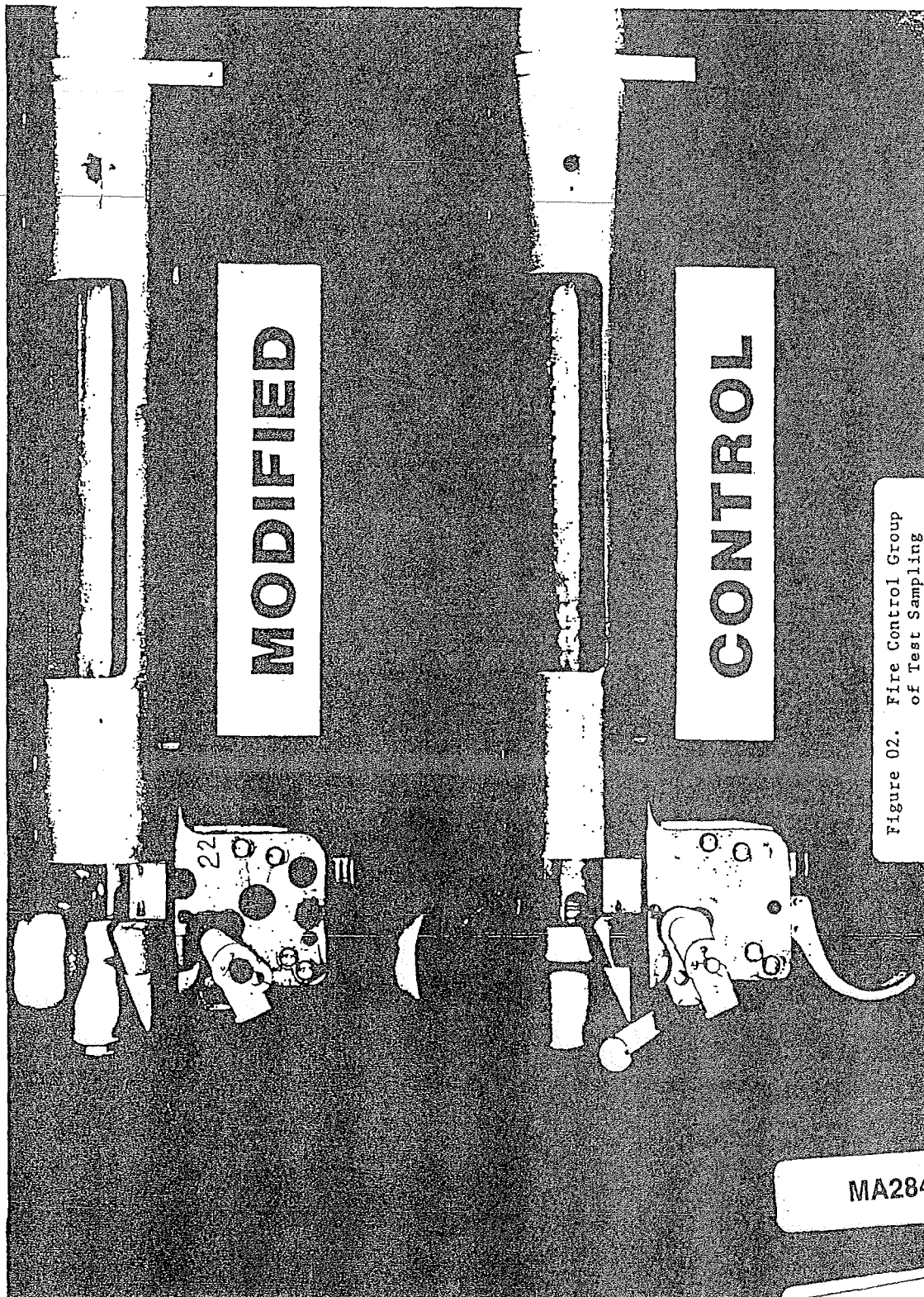


Figure 02. Fire Control Group
of Test Sampling

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SECTION 1.0 INTRODUCTION

1.1 Background

1.1.1 The Remington Arms Company, Inc. has developed an improved Fire Control Assembly for use in Model 700 Rifles which was intended to improve the functional reliability of that rifle.

1.1.2 Preliminary testing of the modified assembly produced favorable results in tests conducted under less-than-severe environmental conditions.

1.2 Objective

1.2.1 The objective of this testing was intended to examine the functional reliability of the modified assemblies when subjected to extremes of temperature and contaminating environmental conditions.

1.3 Scope of Testing

1.3.1 Three unmodified, new condition, Model 700 Rifles and five, Model 700 with Modified Fire Control Assemblies, but in otherwise new condition, were provided for this testing.

1.3.2 Each of the rifles was tested in accordance with the general provisions of TOP 3-2-045, U.S. Army TEST AND EVALUATION COMMAND TEST OPERATIONS PROCEDURE "AUTOMATIC WEAPONS, MACHINE GUNS, HAND AND SHOULDER WEAPON".

1.3.2.1 High Temperature Test, Paragraph 4.5.1.

1.3.2.2 Low Temperature Test, Paragraph 4.5.2.

1.3.2.3 Water Spray Test, Paragraph 4.5.4.

1.3.2.4 Dynamic Dust Test, Paragraph 4.5.5.1.

1.3.2.5 Static Dust Test, Paragraph 4.5.5.2.

1.3.2.6 Mud Test Number 01, Paragraph 4.5.6.2.1.

1.3.2.7 Mud Test Number 02, Paragraph 4.5.6.2.2.

1.3.3 The provisions of TOP 3-2-045, which are intended for testing of auto-loading, full and semi-automatic firearms, were modified to accommodate the bolt action operation of the Model 700 Rifle.

1.4 Description

1.4.1 The Model 700 Test Assemblies, control and modified, were chambered for caliber .30-06 Springfield and were of stainless steel construction with stocks of a black, synthetic (high impact plastic) material.

1.4.2 Three of the modified assemblies were fitted with blued, steel triggers and safeties. Two of the modified assemblies and all of the control assemblies were fitted with stainless steel triggers and safeties.

1.5 Summary

1.5.1 Except for the Blowing Sand and Dust Test, none of the extreme environmental testing produced a discernible effect on the operation of either configuration of Fire Control Groups.

1.5.1.1 The Sand/Dust Test adversely effected the operation of both of the Fire Control Groups.

1.5.2 None of the extreme environmental testing produced inadvertent firings with either Fire Control Group configuration.

1.5.2.1 All of the malfunctions induced by conditions of the tests interrupted the firing sequence and are therefore categorized as having no effect on safety.

1.5.3 During the final cleaning, subsequent to the last test of the series, two of the rifles "fired" inadvertently with the release of the safety - one each of both configurations of the Fire Control Group.

1.5.3.1 A Safety Manipulation Test was conducted which performed one hundred trials with each of the five Modified Fire Control Groups, the three previously tested, unmodified Fire Control Groups and two additional, unmodified Fire Control Groups not previously tested (10 guns/1000 testing) with no additional inadvertent "firings".

SECTION 2.0 PROCEDURES

2.1 General

2.1.1 The procedures of each of the tests of this test series were based on the procedures specified by TOP 3-2-045, U.S. Army TEST AND EVALUATION COMMAND TEST OPERATIONS PROCEDURE "AUTOMATIC WEAPONS, MACHINE GUNS, HAND AND SHOULDER WEAPON".

2.1.2 The procedures of TOP 3-2-045 are intended for testing of auto-loading firearms and the specified firing cycles for automatic and semi-automatic firings are not appropriate for testing of bolt action rifles such as the Model 700.

2.1.3 Lacking universally acceptable procedures for testing of bolt action rifles, the procedures of TOP 3-2-045 were modified to reflect the bolt action operation of the Model 700 Rifle.

2.1.3.1 All firing sequences were fired as single fire, bolt action tests.

2.1.3.2 The required number of firings of each test was reduced from that associated with the semi- and full-automatic, area-fire mission of military weaponry to numbers of firings consistent with a bolt action, point fire, sporting requirement.

2.1.4 Prior to initiation of these tests each of the rifles had purportedly been fired 50-100 times by the Remington Arms Company, Inc.

2.1.4.1 The functional suitability of the rifles was confirmed prior to testing by firing one full magazine (4 rounds) of the test ammunition from each rifle.

2.2 High Temperature Testing

2.2.1 Each of the rifles was cleaned and lubricated prior to testing.

2.2.2 Each of the rifles was fully loaded (four rounds in the magazine and one in the locked chamber), and with safety "on" and an additional full loading of ammunition (five rounds), the rifle was conditioned at a temperature of +160°F for an uninterrupted period of 6-hours.

2.2.3 After 6-hours at +160°F the five loaded cartridges were fired and the gun reloaded and fired with the second full loading of conditioned cartridges.

2.2.4 The entire firing sequence (the initial firing, reloading and second firing) was conducted without removing the gun from within the conditioning chamber.

2.3 Low Temperature Testing

- 2.3.1 Each of the rifles was cleaned and lubricated prior to testing.
- 2.3.2 Each of the rifles was fully loaded (four rounds in the magazine and one in the locked chamber), and with safety "on" and an additional full loading of ammunition (five rounds), the rifle was conditioned at a temperature of -50°F for an uninterrupted period of 4-hours.
- 2.3.3 After 4-hours at -50°F the loaded gun was removed from the conditioning chamber and fired immediately.
- 2.3.4 After firing, the gun was reloaded with the conditioned, second loading and the loaded gun reconditioned for a period of 2-hours at -50°F. The elapsed time between removal of the gun from the conditioning environment and reinsertion in that environment did not exceed 3-minutes.
- 2.3.5 After 2-hours of reconditioning the loaded gun was removed and the second full loading immediately fired.

2.4 Water Spray Test

- 2.4.1 Each of the rifles was cleaned and lubricated prior to testing.
- 2.4.2 The magazine of each of the rifles was fully loaded (four rounds) and, with the bolt open, positioned horizontally in a conditioning chamber and exposed to a water spray at the rate of 0.4 of an inch per minute for a period of 5-minutes.
- 2.4.3 A fifth round was loaded in the chamber, the bolt closed and locked, safety "on", and the rifles conditioned for an additional 5-minutes.
- 2.4.4 After the second conditioning period the gun was removed from the water spray environment, the bolt opened and the chamber drained by positioning the gun muzzle-up and muzzle-down and the full loading of five rounds fired.
- 2.4.5 The entire sequence, 2.4.2 through 2.4.4, was repeated.
- 2.4.6 The entire sequence, 2.4.2 through 2.4.5, was repeated with the rifles positioned muzzle-up in the conditioning chamber.
- 2.4.7 The entire sequence, 2.4.2 through 2.4.5, was repeated with the rifles positioned muzzle-down in the conditioning chamber.

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2.5 Dynamic Dust Test

- 2.5.1 Each of the rifles was cleaned and lubricated prior to testing.
- 2.5.2 Each of the rifles with the muzzle taped closed, was fully loaded (four rounds in the magazine and one in the locked chamber) and with the safety "on", was positioned horizontally and exposed to a blowing sand mixture introduced into the conditioning chamber at the rate of 100.0 grams per minute per square meter for one minute.
- 2.5.3 After 1-minute, and with the gun still within the blowing sand environment, the first full loading (five rounds) was fired.
- 2.5.4. The gun was removed from the conditioning environment, reloaded and the muzzles re-taped. The gun was then reconditioned and refired as in 2.5.2 and 2.5.3.
- 2.5.5 The sand mixture used in this testing was in accordance with that specified by Table 13 of TOP 3-2-045.

2.6 Static Dust Test

- 2.6.1 Each of the rifles was cleaned and lubricated prior to testing.
- 2.6.2 Each of the rifles with the muzzle taped closed, was fully loaded (four rounds in magazine and one in the locked chamber) and with the safety "on", was positioned in a normal, horizontal firing orientation and exposed to a blowing sand mixture introduced into the conditioning chamber at the rate of 5-pounds per minute for 1-minute.
- 2.6.3 After 1-minute conditioning the guns were removed from the conditioning environment and cleaned by wiping the rifle with bare hands, jarring and blowing, prior to firing in an ambient environment.
- 2.6.4 The rifles were then reloaded, reconditioned and fired as in 2.6.2 and 2.6.3 except that the rifles were conditioned upside-down in a horizontal orientation during conditioning.

2.7 Mud Test Number 01

- 2.7.1 Each of the rifles was cleaned and lubricated prior to testing.
- 2.7.2 Each of the rifles was fully loaded (five rounds), the muzzle taped closed and with the safety "on" and an additional full loading of ammunition (five rounds), the rifle was immersed for 1-minute in a mud mixture complying with the mixture specified by Paragraph 4.5.6.2.1 of TOP 3-2-045.

2.7.3 The gun and second ammunition loading were then removed from the mud conditioning and cleaned with bare hands, jarring and blowing.

2.7.4 The initial loading (five rounds) was then fired and the second loading of five rounds loaded and fired without further conditioning.

2.8 Mud Test Number 02

2.8.1 Each of the rifles was cleaned and lubricated prior to testing.

2.8.2 The procedures of 2.7.2 through 2.7.4 were repeated except that after the cleaning of 2.7.3 the gun and second loading of ammunition were dried for 4-hours at ambient conditions.

2.9 Safety Manipulation Test

2.9.1 After an extreme environment testing had been completed each of the test rifles and two, untested, contingency rifles with unmodified (control) Fire Control Groups were given a Safety Manipulation Test.

2.9.2 Each of the ten rifles (five previously tested, modified rifles, three previously tested, Control rifles and two untested Control rifles) was cocked and "dry-fired" fired one hundred times.

2.9.2.1 The unloaded rifles were cocked, the safeties set in the "safe" position, the safeties set in the "fire position and the triggers pulled to dry-fire the rifles.

2.9.2.2 This procedure was repeated for a total of one hundred trials with each rifle except that alternate trails (50 per rifle) included pulling and releasing the trigger while the safety was set in the "safe" position.

2.10 Miscellaneous

2.10.1 All firing sequences were conducted in five round increments with a reconditioning of the rifles between each five round firing sequence except for Mud Tests, Numbers 1 and 2 which did not include a reconditioning between firing sequences.

2.10.2 After each test, the rifles were disassembled, cleaned and lubricated. Disassembly included the bolt assemblies but did NOT include the Fire Control Groups. The five Control Groups were cleaned by immersion in a solvent which were then blow-dried with compressed air after which a light lubricant was applied.

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2.11 Materials

2.11.1 The following materials were used to conduct this testing.

2.11.1.1 Rifle, Caliber .30-06, Remington Model 700, Serial Numbers T6212776, T6212827 and T6212870 and contingency rifles, Serial Numbers T6212823 and T6212840.

2.11.1.2 Rifle, Caliber .30-06, Remington Model 700, MODIFIED, Serial Numbers T6209827, T6212503, T6212692, T6212893 and T6213209.

2.11.1.3 Cartridge, .30-06, Remington, Catalog Number R30061, Lot Number B15KC3225.

2.11.1.4 Oil, Lubricating, LSA, MIL-L-46000B.

2.11.1.5 Miscellaneous range fixturing and materials.

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SECTION 3.0 RESULTS

3.1 General

3.1.1 Upon receipt, each of the rifles was inspected for evidence of damage or other irregularities which might effect the results of this testing.

3.1.1.1 No irregularities were noted and no malfunctions were noted in firing four rounds from each rifle.

3.1.2 Our inspection revealed two visual differences in the Control and Modified Fire Control Assemblies (see Figure 02).

3.1.2.1 The side plates of all Control, Fire Control Assemblies had a single inspection hole while the side plate of the Modified Fire Control Assemblies had additional and larger diameter holes.

3.1.2.2 Two of the five Modified Fire Control Assemblies were fitted with blued steel triggers and safeties while three of the Modified Assemblies and all of the Control Assemblies were fitted with stainless steel triggers and safeties.

3.1.3 Prior to initiation of testing and after all testing had been completed, the trigger pull of each rifle was determined. Table I presents a summary of that testing.

TABLE I. GUN WEIGHT AND TRIGGER PULL

Gun Serial Number	Gun Weight (lbs.) (Unloaded)	Trigger Pull (lbs.)	
		Initial	Final
<u>Modified</u>			
6209827(a)	7.03	4.62	4.89
6212503	7.00	4.38	5.12
6212692	7.04	2.89	4.12
6212893(a)	7.03	4.10	5.35
6213209(a)	6.98	4.14	4.85
<u>Unmodified</u>			
6212776	7.02	4.84	4.86
6212827	7.03	3.88	4.38
6212870	7.02	5.11	5.38
(a) Blued Steel Trigger and Safety.			

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3.2 Summary of Results (Environmental Testing)

3.2.1 Table II presents a summary of the data records of all testing presented in Appendices A and B hereto.

TABLE II. SUMMARY OF EXTREME ENVIRONMENTAL TESTING

Test Sequence Rounds/Gun	Malfunctions							Rounds	Total				
	Hot	Cold	Water	Mud		Dust			Malfunctions				
	(+160°F)	(-50°F)	Spray	No.01	No.02	Static	Dynamic		Total	FJ	FX	FFR	FFD
	01	02	03	04	05	06	07						
	10	10	30	10	10	10	10		Total				
<u>Modified Guns</u>													
6209827(a)	4 (b)	4 (b)	0	0	1 (h)	1 (d)	0	90	10	4	4	1	1
6212503	0	0	1 (f)	0	0	1 (d)	0	90	1	0	0	1	0
6212692	4 (c)	4 (c)	0	2 (d,h)	2 (b,c)	1 (d) *	0	90	13	1	9	2	1
6212893 (a)	0	1 (d)	0	2 (h)	1 (h)	2 (b,h)	0	90	6	1	0	1	4
6213209 (a)	0	5 (c)	0	1 (h)	2 (h)	1 (d) *	0	90	9	0	5	1	3
TOTAL	8	14	0	5	6	6	0	450	39	6	18	6	9
<u>Unmodified Guns</u>													
6212776	0	3 (e)	1 (g)	1 (h)	2 (h)	2 (d) *	0	90	8	0	2	3	3
6212827	0	0	0	1 (h)	3 (b,d,h)	1 (d) *	0	90	5	1	0	2	2
6212870	0	2 (d)	0	0	1 (h)	1 (h)	0	90	4	0	0	2	2
TOTAL	0	5	0	2	6	4	0	270	17	1	2	7	7

(a) Gun fitted with blued steel trigger and safety.

(b) Failures-To-Eject fired case (FJ).

(c) Failures-To-Extract fired case (FX).

(d) Failure-To-Fire (FFR).

(e) Two Failures-To-Extract fired case (FX) and one Failure-To-Fire (FFR).

(f) Disregard. Failure-To-Fire (FFR) attributed to ammunition.

(g) Disregard. Grip Cap Failed-To-Remain-Assembled (FA).

(h) Failure-To-Feed (FFD) up in magazine.

* ATTRIBUTED TO FIRE CONTROL GROUP.

3.2.2 Of the 58 malfunctions all but two were attributed to the gun assembly and the effects of the test environment on that assembly.

3.2.2.1 One of the two malfunctions not attributable to the gun was ammunition-attributable and the other was the loosening and disassembly of the Grip Cap.

3.2.2.2 All of the malfunctions, excepting the disassembled Grip Cap caused an interruption in the operation of the rifle (stoppage).

3.2.3 The cause of all of the 56 gun-attributable malfunctions/stoppages may be characterized as contamination of the Bolt Assembly (Failures-To-Fire, Extract, Eject), Magazine Assembly (Failures-To-Feed-up) and the Fire Control Group (Failures-To-Fire). In every case the stoppage was cleared by removal of the contaminant - ice, mud, sand, dust and brass shavings.

3.2.4 All of the malfunctions attributable to the Fire Control Group (Failures-To-Fire), occurred during the Static Dust Test and were characterized as "jamming of the Sear Safety Cam in the downward position thereby disallowing cocking of the Firing Pin in preparation for the next firing.

3.2.4.1 All of the five occurrences were cleared by manipulation of the Fire Control Group.

3.2.5 None of the malfunctions resulted in an inadvertent or unintended firing.

TABLE III. MALFUNCTIONS (EXTREME ENVIRONMENTAL TESTS)

Ammunition	Attributable To -				Total
	Fire Control Group	Magazine Assembly	Bolt Assembly	Other	
<u>Control Rifles</u>	3	7	7	1(a)	17
<u>Modified Rifles</u>					
Blue Steel	1	8	16		
Trigger and Safety					
Stainless Steel 1(a)	1	1	12		
Trigger and Safety					
Total (Blued and Stainless) 1(a)	2	9	28		39
(a) Disregard. Not attributed to Gun or Test Conditions.					

3.3 Summary of Results (Safety Manipulation)

3.3.1 During post-test cleaning, two of the cleaned guns (one each Modified and Control), Serial Numbers 6212893 and 6212870, malfunctioned in a manner which, had they been loaded, would have resulted in an inadvertent firing.

3.3.1.1 When the safety was moved from the "safe" to the "fire" position, the firing pin fell without manipulation of the trigger.

3.3.2 To more thoroughly examine this phenomena, the eight test rifles and two previously untested rifles with unmodified (Control) Fire Control Groups (ten total) were subjected to the Safety Manipulation Test of Paragraph 2.9.

3.3.3 Table IV presents a summary of that testing which was conducted after cleaning and application of a light lubricant.

TABLE IV. SUMMARY OF SAFETY-MANIPULATION TESTS

Rifle Serial Number	<u>Environmental Test Malfunctions</u>		<u>Safety Manipulation Malfunctions</u>	
	Total	Fire Control Group	w/Trigger Pull (a)	w/o Trigger Pull (b)
<u>Control (Unmodified)</u>				
6212776	8	2	0	0
6212827	5	1	0	0
6212870	4	0 (e)	0	0 (e)
6212823 (c)	NA	NA	0	0
6212840 (c)	NA	NA	0	0
<u>Modified</u>				
6209827 (d)	10	0	0	0
6212503	1	0	0	0
6212692	13	1	0	0
6212893 (d)	6	0 (e)	0	0 (e)
6213209 (d)	9	1	0	0
(a) Trigger pulled and released with safety in "safe" position (50 trials).				
(b) Trigger was not pulled with safety in "safe" position (50 trials).				
(c) Previously untested.				
(d) Fitted with blued steel safety and triggers.				
(e) Does not include inadvertent firing during cleaning (see Paragraph 3.3.1)				

3.4 Conclusions

3.4.1 The conclusions presented herein are based on the limited results of this testing and are not necessarily endorsed by anyone other than H.P. White Laboratory, Inc. and its personnel.

3.4.2 Both configurations of the Fire Control Group (Control and Modified) of the Model 700 Rifle were adversely effected by environmental extremes (Sand and Dust Test).

3.4.3 None of the ENVIRONMENTALLY-INDUCED malfunctions of the Model 700 Rifle with either Fire Control Group produced an inadvertent firing hazard.

3.4.3.1 While no environmentally-induced, inadvertent firings were encountered, it may be conjectured that, should the dust-induced malfunctions of the Fire Control Groups, which jammed the Sear Safety Cam, be accompanied by a dust-jammed Firing Pin in the FIRED position, the gun may inadvertently fire during the chambering sequence. (While ten instances of debris-jammed Firing Pins were encountered, it should be noted that all were jammed in the COCKED position.)

3.4.4 The overall, comparative failure rate of the rifles fitted with Control and Modified Fire Control Groups (63/1000 vs 87/1000) is, given the limited sampling, not statistically significant (see Table V).

TABLE V. MALFUNCTION RATE (a)

	Unmodified Assemblies	Modified Assemblies		
		Blued Steel	Stainless Steel	Overall (Both)
Hot Test	0	133	200	160
Cold Test	167	333	200	280
Spray Test	0	0	0	0
Mud, No. 1 Test	67	100	100	100
Mud, No. 2 Test	200	133	100	120
Dust, Static Test	133	100	133	120
Dust, Dynamic Test	0	0	0	0
Individual Maximum	89	111	144	144
Individual Minimum	44	67	11	11
COMBINED	63	93	78	87

(a) Anticipated malfunctions in 1000 firings - extrapolated from test results of a total of 90 firings per gun.

3.4.5 The post-test, Safety Manipulation Tests failed to recreate a single instance of the inadvertent firings encountered during cleaning.

3.4.5.1 That result suggests the inadvertent firings may be an infrequent, random phenomena created by debris which is cleared by subsequent manipulation of the Fire Control Group.

APPENDIX A

-UNMODIFIED MODEL 700 RIFLES-

Serial Number 6212776	Pages A2 - A8
Serial Number 6212827	Pages A9 - A15
Serial Number 6212870	Pages A16 - A22

A-1

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-HIGH TEMPERATURE TEST-
(Paragraph 4.5.1 of TCP 3-2-045)

HPWLI Job Number

6 October 1995

Date _____

Gun: Remington, 700, .30-06, New, 6212776
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: +160 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Conduct firing tests from within conditioning chamber in accordance with specified firing cycle.

[illegible]

MARKS: (a) Gun conditioned with loaded and locked chamber and safety on.

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-LOW TEMPERATURE TEST-
Paragraph 4.5.2 of TOP 3-2-045)

6793-02
HPWLI Job Number
9 October 1995

Date

Gun: Remington 700 .30-06 New 6212776
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: -50 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Remove gun and sufficient ammunition to fire one firing sequence and immediately fire that sequence in ambient environment (+70°±5°F) at specified rate of fire. Return gun to conditioning chamber for two hours and fire second sequence. Repeat two hour conditioning and firing sequence until specified firings are completed.

Sequence		Ammo	Mag.	Velocity (Fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppage	Breakage	Class	Attrib.	EPR
o.	Rds.						Type	Rd. No. (s)	Cause					
01	05					None	FX	5	(b)	Y	N	G		
02	04					None	FFR	6	(c)	Y	N	G		
							FFR	9	(d)	Y	N	G		
End of Test														

REMARKS: (a) Gun conditioned with loaded and locked chamber and safety on.
(b) Failure-To-Extract fire case. Extracted on second attempt.
(c) Failure-To-Fire. Jammed (Frozen) firing pin freed and fired on second attempt.
(d) Failure-To-Fire. Jammed (Frozen) firing pin freed but primer which had been lightly struck on first attempt would not fire despite multiple, additional attempts.

A3

01-32B Low Temperature

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-WATER SPRAY TEST-
Paragraph 4.5.4 of TOP 3-2-045)

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HPWLI Job Number
10 October 1995
Date

Gun: Remington 700 .30-06 New 6212776
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 70 (°F), Conditioning Time: NA (Hrs.)

Test Description: Clean and lubricate gun. Expose to overhead water spray rate of 0.4 inch per minute and conduct firing sequence in accordance with following schedule:

- Horizontal Orientation, With loaded magazine, empty and open chamber - 5 minutes.
- With loaded magazine, loaded and closed chamber - 5 minutes.
- Open and drain chamber and fire one sequence.
- Repeat horizontal exposure and firing sequence.
- Muzzle-Up Orientation, Repeat entire Horizontal Orientation Test.
- Muzzle-Down Orientation, Repeat entire Horizontal Orientation Test.

Sequence		Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppage Breakage	Class	Attrib.	EPR
No.	Rds.						Type	Rd. No. (s)	Cause				
1H	05					None		None					
2H	05					None		None					
3U	05					None		None	(a)	N	N	G	
4U	05					None		None					
5D	05					None		None					
6D	05					None		None					
-End of Test-													

REMARKS: (a) Grip cap fell from stock after round 10, replaced.

A4

01-32C Water Spray

Confidential - Subject
to Protective Order
Williams v. Remington

MA2859

-MUD TEST NUMBER 1-
(Paragraph 4.5.6.2.1 of TOP 3-2-045)

Date _____

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

[illegible]

MARKS: (a) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.

(b) Failure-to-fire (bolt override). Cleared by pushing down on cartridge in magazine and releasing on third attempt.

01-32F Mud Test #1

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2860

H.P. White Laboratory Inc.

-MUD TEST NUMBER 2-
(Paragraph 4.5.5.2.2 of TOP 3-2-045)

6793-02
HPWLI Job Number
18 October 1995
Date

Gun: Remington 700 .30-06 New 6212776
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr. SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 69 (°F), Conditioning Time: 4-1/60 (Hrs.)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Place conditioned gun and unprotected ammunition in 70°±5°F environment for four hours. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

Sequence No.	Rds.	Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Magazine Leakage	Class	Attrib.	EPR
							Type	Rd. No. (s)	Cause				
01	05					None	FFD	3	(b)(c)	Y	N		T
02	05					None	FFD	8	(b)(c)	Y	N		T
					-End of Test-								

MARKS: (a) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(b) Failure-to-feed (bolt override). Ammunition in magazine depressed and feeding restored on second attempt.
(c) Bolt difficult to operate.

A6

01-32G Mud Test #2

Confidential - Subject
to Protective Order
Williams v. Remington

MA2861

H.P. White Laboratory Inc.

6793-02

-STATIC DUST TEST-
(Paragraph 4.5.5.2 of TOP 3-2-045)

HPWLI Job Number
19 October 1995

Date _____

Gun: Remington, 700, .30-06, New, 6212776
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 64 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. Remove gun from chamber and fire one sequence. Repeat conditioning with gun upside-down and firing sequence.

[illegible]

REMARKS: (a) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.

(b) Sear Safety Cam jammed downward preventing cocking of firing pin. Cleared by manipulation.

H.P. White Laboratory Inc.

6793-02

-DYNAMIC DUST TEST-

HPWLI Job Number

(Paragraph 4.5.5.1 of TOP 2-2-045)

23 OCTober 1995

Date _____

Gun: Remington, 700, .30-06, New, 6212776
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 61 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. From within the conditioning chamber fire one sequence. Remove gun from conditioning chamber, reload, recondition and fire a second sequence.

[illegible]

7-MARKS: (a) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.

A8

01-32E Dynamic Dust

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2863

H.P. White Laboratory Inc.

-HIGH TEMPERATURE TEST-
(Paragraph 4.5.1 of TOP 3-2-045)

6793-02

HPWLI Job Number
6 October 1995

Date _____

Gun: Remington, 700, .30-06, New, 6212827
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: +160 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Conduct firing tests from within conditioning chamber in accordance with specified firing cycle.

[illegible]

MARKS: (a) Gun conditioned with loaded and locked chamber and safety on.

H.P. White Laboratory Inc.

-LOW TEMPERATURE TEST-
(Paragraph 4.5.2 of TOP 3-2-045)

6793-02

HPWLI Job Number
9 October 1995
Date

Gun: Remington 700 .30-06 New 6212827
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr. SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: -50 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Remove gun and sufficient ammunition to fire one firing sequence and immediately fire that sequence in ambient environment (+70°±5°F) at specified rate of fire. Return gun to conditioning chamber for two hours and fire second sequence. Repeat two hour conditioning and firing sequence until specified firings are completed.

Sequence		Ammo	Mag.	Velocity (fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppage Breakage	Class	Attrib.	EPR
O.	Rds.						Type	Rd. No. (s)	Cause				
01	05					None		None					
02	05					None		None					
						-End of Test-							

REMARKS: (a) Gun conditioned with loaded and locked chamber and safety on.

A10

01-32B Low Temperature

Confidential - Subject
to Protective Order
Williams v. Remington

MA2865

H.P. White Laboratory Inc.

6793-02

-WATER SPRAY TEST-
(Paragraph 4.5.4 of TOP 3-2-045)

HPWLI Job Number
10 October 1995
Date

Gun: Remington 700 .30-06 New 6212827
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 70 (°F), Conditioning Time: NA (Hrs.)

Test Description: Clean and lubricate gun. Expose to overhead water spray rate of 0.4 inch per minute and conduct firing sequence in accordance with following schedule:

Horizontal Orientation, With loaded magazine, empty and open chamber - 5 minutes.
With loaded magazine, loaded and closed chamber - 5 minutes.
Open and drain chamber and fire one sequence.
Repeat horizontal exposure and firing sequence.
Muzzle-Up Orientation, Repeat entire Horizontal Orientation Test.
Muzzle-Down Orientation, Repeat entire Horizontal Orientation Test.

Sequence		Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stops Breaks Class	Attrib.	EPR
No.	Rds.						Type	Rd. No. (s)	Cause			
1H	05					None		None				
2H	05					None		None				
3U	05					None		None				
4U	05					None		None				
5D	05					None		None				
6D	05					None		None				
-End of Test-												

REMARKS:

All

01-32C Water Spray

Confidential - Subject
to Protective Order
Williams v. Remington

MA2866

H.P. White Laboratory Inc.

6793-02

-MUD TEST NUMBER 1-
(Paragraph 4.5.6.2.1 of TOP 3-2-045)

HPWLI Job Number

17 October 1995

Date _____

Gun: Remington	700	.30-06	New	6212827
(Make)	(Model)	(Caliber)	(Condition)	(Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 62 (°F), Conditioning Time: 1/60 (Hrs.)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

[illegible]

MARKS: (a) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(b) Failure-to-feed (bolt override). Pushing on ammunition in magazine cleared stoppage and feeding restored on second attempt.
~~(c) Bolt difficult to operate.~~

A12

01-32F Mud Test #1

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2867

H.P. White Laboratory Inc.

-MOD TEST NUMBER 2-
(Paragraph 4.5.6.2.2 of TOP 3-2-045)

6793-02
HPWLI Job Number
18 October 1995
Date

Gun: Remington 700 .30-06 New 6212827
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr. SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 69 (°F), Conditioning Time: 4-1/60 (Hrs.)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Place conditioned gun and unprotected ammunition in 70°±5°F environment for four hours. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

Sequence		Ammo	Mag.	Velocity (fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppage	Breakage	Class	Attrib.	EPR
No.	Rds.						Type	Rd. No. (s)	Cause					
01	05					None	FJ	5	(a)(c)	Y	N		T	
02	05					None	FFD	8	(d)	Y	N		T	
							FFR	8	(e)	Y	N		T	
-End of Test-														

MARKS(a) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.

(b) Failure-to-eject.

(c) Bolt difficult to operate.

(d) Failure-to-feed (bolt override). Ammunition in magazine depressed and feeding restored on second attempt.

(e) Failure-to-fire. Jammed firing pin freed by manipulation.

01-32G Mud Test #2

A13

Confidential - Subject
to Protective Order
Williams v. Remington

MA2868

H.P. White Laboratory Inc.

6793-02

-STATIC DUST TEST-
(Paragraph 4.5.5.2 of TOP 3-2-045)

HPWLI Job Number
19 October 1995

Date _____

Gun: Remington, 700, .30-06, New, 6212827
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KG3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 61 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. Remove gun from chamber and fire one sequence. Repeat conditioning with gun upside-down and firing sequence.

[illegible]

REMARKS: (a) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.

(b) Sear Safety Cam jammed in down position, preventing cocking of firing pin.

A14

01-32D Static Dust

Confidential - Subject
to Protective Order
Williams v. Remington

MA2869

6793-02

-DYNAMIC DUST TEST-
(Paragraph 4.5.5.1 of TOP 3-2-045)

HPWLI Job Number
20 October 1995

Date _____

Gun:	Remington	700	.30-06	New	6212827
	(Make)	(Model)	(Caliber)	(Condition)	(Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 66 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. From within the conditioning chamber fire one sequence. Remove gun from conditioning chamber, reload, recondition and fire a second sequence.

[illegible]

MARKS: (a) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.

A15

01-32E Dynamic Dust

Confidential - Subject
to Protective Order
Williams v. Remington

MA2870

H.P. White Laboratory Inc.

6793-02

-HIGH TEMPERATURE TEST-

(Paragraph 4.5.1 of TOP 3-2-045)

HPWLI Job Number
6 October 1995

6 October 1995

Date _____

Gun: Remington, 700, .30-06, New, 6212870
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: +160 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Conduct firing tests from within conditioning chamber in accordance with specified firing cycle.

[illegible]

MARKS: (a) Gun conditioned with loaded and locked chamber and safety on.

H.P. White Laboratory Inc.

6793-02

-LOW TEMPERATURE TEST-
(Paragraph 4.5.2 of TOP 3-2-045)

HPWLI Job Number
9 October 1995

Date

Gun: Remington 700 .30-06 New 6212870
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: -50 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Remove gun and sufficient ammunition to fire one firing sequence and immediately fire that sequence in ambient environment (+70°±5°F) at specified rate of fire. Return gun to conditioning chamber for two hours and fire second sequence. Repeat two hour conditioning and firing sequence until specified firings are completed.

Sequence		Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppage	Breakage	Class	Attrib.	EPR
O.	Rds.						Type	Rd. No. (s)	Cause					
01	05					None		None						
02	04					None	FFR	6	(b)	Y	N		G	
							FFR	7	(c)	Y	N		G	
					End of Test									

MARKS: (a) Gun conditioned with loaded and locked chamber and safety on.
(b) Failure-To-Fire. Jammed (Frozen) firing pin freed and fired on second attempt.
(c) Failure-To-Fire. Jammed (Frozen) firing pin freed but primer which had been lightly struck on first attempt would not fire despite multiple, additional attempts.

A-17

01-32B Low Temperature

Confidential - Subject
to Protective Order
Williams v. Remington

MA2872

H.P. White Laboratory Inc.

-WATER SPRAY TEST-
(Paragraph 4.5.4 of TOP 3-2-045)

6793-02

HPWLI Job Number
10 October 1995

Date

Gun: Remington 700 30-06 New 6212870
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 70 (°F), Conditioning Time: NA (Hrs.)

Test Description: Clean and lubricate gun. Expose to overhead water spray rate of 0.4 inch per minute and conduct firing sequence in accordance with following schedule:

Horizontal Orientation, With loaded magazine, empty and open chamber - 5 minutes.
With loaded magazine, loaded and closed chamber - 5 minutes.
Open and drain chamber and fire one sequence.
Repeat horizontal exposure and firing sequence.

Muzzle-Up Orientation, Repeat entire Horizontal Orientation Test.

Muzzle-Down Orientation, Repeat entire Horizontal Orientation Test.

Sequence		Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Shopper Breakage	Class	Attrib.	EPR
No.	Rds.						Type	Rd. No. (s)	Cause				
1H	05					None		None					
2H	05					None		None					
3U	05					None		None					
4U	05					None		None					
5D	05					None		None					
6D	05					None		None					
-End of Test-													

REMARKS:

A18

01-32C Water Spray

Confidential - Subject
to Protective Order
Williams v. Remington

MA2873

-MOD TEST NUMBER 1-
(Paragraph 4.5.6.2.1 of TOP 3-2-045)

HPWLI Job Number
17 October 1995

Date _____

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

A19

01-32F Mud Test #1

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2874

-MOD TEST NUMBER 2-
(Paragraph 4.5.6.2.2 of TOP 3-2-045)

HPWLI Job Number
18 October 1995

Gun: Remington, 700, .30-06, New, 6212870
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr. SP, B15KC3225
(Make) (Type) (Lot Number)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Place conditioned gun and unprotected ammunition in 70°±5°F environment for four hours. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

A20

01-32G Mud Test #2

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2875

H.P. White Laboratory Inc.

6793-02

-STATIC DUST TEST-
(Paragraph 4.5.5.2 of TOP 3-2-045)

HPWLI Job Number
19 October 1995

Date _____

Gun: Remington, 700, .30-06, New, 6212870
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 62 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. Remove gun from chamber and fire one sequence. Repeat conditioning with gun upside-down and firing sequence.

[illegible]

REMARKS: (a) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.

(b) Failure-to-feed (bolt override). Ammunition in magazine depressed and released, and, after two attempts, feeding was restored.

A21

01-32D Static Dust

Confidential - Subject
to Protective Order
Williams v. Remington

MA2876

H.P. White Laboratory Inc.

6793-02

-DYNAMIC DUST TEST-

(Paragraph 4.5.5.1 of TOP 3-2-045)

HPWLI Job Number

20 October 1995

Date _____

Gun: Remington, 700, .30-06, New, 6212870
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 67 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. From within the conditioning chamber fire one sequence. Remove gun from conditioning chamber, reload, recondition and fire a second sequence.

[illegible]

REMARKS: (a) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.

A22

01-32E Dynamic Dust

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2877

APPENDIX B

-MODIFIED MODEL 700 RIFLES-

Serial Number 6209827	Pages B2 - B8
Serial Number 6212503	Pages B9 - B15
Serial Number 6212692	Pages B16 - B22
Serial Number 6212893	Pages B23 - B29
Serial Number 6213209	Pages B30 - B36

B-1

Confidential - Subject
to Protective Order
Williams v. Remington

MA2878

H.P. White Laboratory Inc.

6793-02

-HIGH TEMPERATURE TEST-

HPWLI Job Number

6 October 1995

Date _____

Gun: Remington, 700X, .30-06, New (a)(c), 6209827
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC225
(Make) (Type) (Lot Number)

Conditioning Temperature: +160 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Conduct firing tests from within conditioning chamber in accordance with specified firing cycle.

[illegible]

REMARKS:

- (a) Fitted with Modified Fire Control Group.
- (b) Gun conditioned with loaded and locked chamber and safety on.
- (c) Fitted with blued steel trigger and safety.
- (d) Brass shavings jammed ejector rearward.
- (e) Disassembled and cleaned.

H.P. White Laboratory Inc.

6793-02

-LOW TEMPERATURE TEST-
(Paragraph 4.5.2 of TOP 3-2-045)

HPWLI Job Number
9 October 1995

Date

Gun: Remington 700X .30-06 New (a)(c) 6209827
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: -50 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Remove gun and sufficient ammunition to fire one firing sequence and immediately fire that sequence in ambient environment (+70°±5°F) at specified rate of fire. Return gun to conditioning chamber for two hours and fire second sequence. Repeat two hour conditioning and firing sequence until specified firings are completed.

Sequence No.	Rds.	Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Storage Breakage	Class	Attrib.	EPR
							Type	Rd. No. (s)	Cause				
01	05					None		None					
02	01					None	FFR	6,7,8&10	(d)	Y	N	G	
					-End of Test-								

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on.
(c) Fitted with blued steel trigger and safety.
(d) Failure-To-Fire. Jammed (Frozen) firing pin freed but primer which had been lightly struck on first attempt would not fire despite multiple, additional attempts.

B3

01-32B Low Temperature

Confidential - Subject
to Protective Order
Williams v. Remington

MA2880

H.P. White Laboratory Inc.

6793-02

-WATER SPRAY TEST-
(Paragraph 4.5.4 of TOP 3-2-045)

HPWLI Job Number
11 October 1995

Date

Gun: Remington 700X .30-06 New (a)(b) 6209827
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 70 (°F), Conditioning Time: NA (Hrs.)

Test Description: Clean and lubricate gun. Expose to overhead water spray rate of 0.4 inch per minute and conduct firing sequence in accordance with following schedule:

- Horizontal Orientation , With loaded magazine, empty and open chamber - 5 minutes.
- With loaded magazine, loaded and closed chamber - 5 minutes.
- Open and drain chamber and fire one sequence.
- Repeat horizontal exposure and firing sequence.
- Muzzle-Up Orientation , Repeat entire Horizontal Orientation Test.
- Muzzle-Down Orientation, Repeat entire Horizontal Orientation Test.

Sequence		Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppage Breakage	Class	Attrib.	EPR
No.	Rds.						Type	Rd. No. (s)	Cause				
1H	05					None		None					
2H	05					None		None					
3U	05					None		None					
4U	05					None		None					
5D	05					None		None					
6D	05					None		None					
-End of Test-													

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Fitted with blued steel trigger and safety.

B4

01-32C Water Spray

Confidential - Subject
to Protective Order
Williams v. Remington

MA2881

-MOD TEST NUMBER 1-
(Paragraph 4.5.6.2.1 of TOP 3-2-045)

HPWLI Job Number
16 October 1995

Care

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

[illegible]

MARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Fitted with blued steel trigger and safety.

-MUD TEST NUMBER 2-
(Paragraph 4.5.6.2.2 of TOP 3-2-045)

HPWLI Job Number
17 October 1995
Date

Conditioning Temperature: 68 (°F), Conditioning Time: 4-1/60 (Hrs.)

[illegible]01-32G Mud Test #2

MA2883

H.P. White Laboratory Inc.

6793-02

-STATIC DUST TEST-
(Paragraph 4.5.5.2 of TOP 3-2-045)

HPWLI Job Number
18 October 1995

Date _____

Gun: Remington, 700X, .30-06, New(a)(c), 6209827
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 62 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. Remove gun from chamber and fire one sequence. Repeat conditioning with gun upside-down and firing sequence.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Fitted with blued steel trigger and safety.
(d) Bolt difficult to operate.
(e) Failure-to-fire. Jammed firing pin worked free by manipulation.

B7

01-32D Static Dust

Confidential - Subject
to Protective Order
Williams v. Remington

MA2884

H.P. White Laboratory Inc.

6793-02

-DYNAMIC DUST TEST-

(Paragraph 4.5.5.1 of TOP 3-2-045)

HPWLI Job Number

20 October 1995

Date _____

Gun: Remington, 700X, .30-06, New (a)(c), 6209827
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 64 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. From within the conditioning chamber fire one sequence. Remove gun from conditioning chamber, reload, recondition and fire a second sequence.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Fitted with blued steel trigger and safety.

H.P. White Laboratory Inc.

-HIGH TEMPERATURE TEST-

HPWLI Job Number

Date _____

Gun: Remington, 700X, .30-06, New (a), 6212503
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B1SKC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: +160 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Conduct firing tests from within conditioning chamber in accordance with specified firing cycle.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on.

H.P. White Laboratory Inc.

6793-02

-LOW TEMPERATURE TEST-
(Paragraph 4.5.2 of TOP 3-2-045)

HPWLI Job Number
9 October 1995

Date _____

Gun: Remington, 700X, .30-06, New (a), 6212503
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: -50 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Remove gun and sufficient ammunition to fire one firing sequence and immediately fire that sequence in ambient environment ($+70^{\circ}\pm 5^{\circ}\text{F}$) at specified rate of fire. Return gun to conditioning chamber for two hours and fire second sequence. Repeat two hour conditioning and firing sequence until specified firings are completed.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on.

810

01-32B Low Temperature

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2887

H.P. White Laboratory Inc.

-WATER SPRAY TEST-
(Paragraph 4.5.4 of TOP 3-2-045)

6793-02
HPWLI Job Number
12 October 1995
Date

Gun: Remington 700X .30-06 New (a) 6212503
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 70 (°F), Conditioning Time: NA (Hrs.)

Test Description: Clean and lubricate gun. Expose to overhead water spray rate of 0.4 inch per minute and conduct firing sequence in accordance with following schedule:

- Horizontal Orientation, With loaded magazine, empty and open chamber - 5 minutes.
With loaded magazine, loaded and closed chamber - 5 minutes.
Open and drain chamber and fire one sequence.
Repeat horizontal exposure and firing sequence.
Muzzle-Up Orientation, Repeat entire Horizontal Orientation Test.
Muzzle-Down Orientation, Repeat entire Horizontal Orientation Test.

Sequence		Ammo	Mag.	Velocity (fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stops	Breaks	Class	Attrib.	EPR
No.	Rds.						Type	Rd. No. (s)	Cause					
1H	05					None		None						
2H	05					None		None						
3U	05					None		None						
4U	05					None		None						
5D	05					None		None						
6D	04					None	FFR	28	(b)	YN		A		
-End of Test-														

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Primer struck three times without firing.

B11

01-32C Water Spray

Confidential - Subject
to Protective Order
Williams v. Remington

MA2888

H.P. White Laboratory Inc.

-MUD TEST NUMBER 1-
(Paragraph 4.5.6.2.1 of TOP 1-2-045)

6793-02
HPWLI Job Number
16 October 1995
Date

Gun: Remington, 700X, .30-06, New (a), 6212503
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 61 (°F), Conditioning Time: 1/60 (Hrs.)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

Sequence		Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppage	Breakage	Class	Attrb.	EPR
No.	Rds.						Type	Rd. No. (s)	Cause					
01	05					None		None	(c)	N	N		T	
02	05					None		None	(d)	N	N		T	
						-End of Test-								

MARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Blown primer - one case.
(d) Bolt difficult to operate.

B12

01-32F Mud Test #1

Confidential - Subject
to Protective Order
Williams v. Remington

MA2889

H.P. White Laboratory Inc.

6793-02

-MOD TEST NUMBER 2-
(Paragraph 4.5.5.2.2 of TOP 3-2-045)

HPWLI Job Number
17 October 1995

Date: _____

Gun: Remington, 700X, .30-06, New(a), 6212503
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr. SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 68 (°F), Conditioning Time: 4-1/60 (Hrs.)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Place conditioned gun and unprotected ammunition in 70°±5°F environment for four hours. Fire one sequence. Without further mud exposure, reload gun and fire second sequence..

[illegible]

H.P. White Laboratory Inc.

6793-02

-STATIC DUST TEST-

(Paragraph 4.5.3.2 of TDP 1-2-045)

HPWLI Job Number
18 October 1995

Date _____

Gun: Remington 700X .30-06 New(a) 6212503
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 61 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. Remove gun from chamber and fire one sequence. Repeat conditioning with gun upside-down and firing sequence.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Failure-to-fire. Jammed firing pin worked free by manipulation.
(d) Bolt difficult to operate.

B14

01-32D Static Dust

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2891

H.P. White Laboratory Inc.

6793-02

-DYNAMIC DUST TEST-
(Paragraph 4.5.5.1 of TOP 3-2-045)

HPWLI Job Number
20 October 1995

Date _____

Gun: Remington, 700X, .30-06, New (a), 6212503
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, BL5KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 62 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. From within the conditioning chamber fire one sequence. Remove gun from conditioning chamber, reload, recondition and fire a second sequence.

[illegible]

7-MARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun Conditioned with loaded and locked chamber and safety on and muzzle taped closed.

B15

01-32E Dynamic Dust

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2892

H.P. White Laboratory Inc.

-HIGH TEMPERATURE TEST-
(Paragraph 4.5.1 of TOP 3-2-045)

6793-02
HPWLI Job Number
5 October 1995

Date

Gun: Remington, 700X, .30-06, New(a), 6212692
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: +160 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Conduct firing tests from within conditioning chamber in accordance with specified firing cycle.

Sequence		Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppage Breakage	Class	Attrib.	EPR
To.	Rds.						Type	Rd. No. (s)	Cause				
01	05					None	FX	3	(c)	Y N	G		
02	05					None	FX	7	(c)	Y N	G		
							FX	8	(c)	Y N	G		
							FX	10	(c)	Y N	G		
-End of Test-													

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on.
(c) Failure to Extract, but when bolt was again closed on chambered case, case Extracted.

B16

01-32A High Temperature

Confidential - Subject
to Protective Order
Williams v. Remington

MA2893

H.P. White Laboratory Inc.

-LOW TEMPERATURE TEST-
(Paragraph 4.5.2 of TOP 3-2-045)

6793-02

HPWLI Job Number
9 October 1995
Date

Gun: Remington 700X .30-06 New (a) 6212692
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: -50 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Remove gun and sufficient ammunition to fire one firing sequence and immediately fire that sequence in ambient environment (+70°±5°F) at specified rate of fire. Return gun to conditioning chamber for two hours and fire second sequence. Repeat two hour conditioning and firing sequence until specified firings are completed.

Sequence		Ammo	Mag.	Velocity (fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppage	Breakage	Class	Attrib.	EPR
No.	Rds.						Type	Rd. No. (s)	Cause					
01	05					None	FX	1 & 5	(c)	Y	N	G		
02	05					None	FX	6 & 7	(c)	Y	N	G		
					End of Test									

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on.
(c) Failure-To-Extract fire case. Extracted on second attempt.

B17

01-32B Low Temperature

Confidential - Subject
to Protective Order
Williams v. Remington

MA2894

H.P. White Laboratory Inc.

-WATER SPRAY TEST-
(Paragraph 4.5.4 of TOP 3-2-045)

6793-02

HPWLI Job Number
13 October 1995

Date

Gun: Remington 700X 30-06 New (a) 6212692
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 70 (°F), Conditioning Time: NA (Hrs.)

Test Description: Clean and lubricate gun. Expose to overhead water spray rate of 0.4 inch per minute and conduct firing sequence in accordance with following schedule:

- Horizontal Orientation , With loaded magazine, empty and open chamber - 5 minutes.
 , With loaded magazine, loaded and closed chamber - 5 minutes.
 , Open and drain chamber and fire one sequence.
 , Repeat horizontal exposure and firing sequence.
Muzzle-Up Orientation , Repeat entire Horizontal Orientation Test.
Muzzle-Down Orientation , Repeat entire Horizontal Orientation Test.

Sequence		Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppage Breakage	Class	Attrib.	EPR
No.	Rds.						Type	Rd. No. (s)	Cause				
1H	05					None		None					
2H	05					None		None					
3U	05					None		None					
4U	05					None		None					
5D	05					None		None					
6D	05					None		None					
					-End of Test-								

REMARKS: (a) Fitted with Modified Fire Control Group.

B18

01-32C Water Spray

Confidential - Subject
to Protective Order
Williams v. Remington

MA2895

-MUD TEST NUMBER 1-
(Paragraph 4.5.6.2.1 of TOP 3-2-045)

HPWLI Job Number
13 October 1995

Gun: Remington, 700X, .30-06, New (a), 6212692
(Make) (Model) (Caliber) (Condition) (Serial Number)

Conditioning Temperature: 73 (°F), Conditioning Time: 1/60 (Hrs.)

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Failure-to-fire. Firing pin failed to fall. Loosened by manipulation. Fired on second attempt.
(d) Failure-to-feed. Magazine freed by pushing down on cartridge and releasing. Feeding restored on third attempt.

~~Confidential - Subject
to Protective Order
Williams v. Remington~~

MA2896

H.P. White Laboratory Inc.

-MUD TEST NUMBER 2-
(Paragraph 4.5.6.2.2 of TOP 3-2-045)

6793-02
HPWLI Job Number
17 October 1995
Date

Gun: Remington, 700X, .30-06, New (a), 6212692
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr. SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 68 (°F), Conditioning Time: 4-1/60 (Hrs.)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Place conditioned gun and unprotected ammunition in 70°±5°F environment for four hours. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

[illegible]

MARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Failure-to-extract. Extracted on second attempt.
(d) Failure-to-eject. Fired case dropped from bolt after extraction.

B20

01-32G Mud Test #2

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2897

H.P. White Laboratory Inc.

HPWLI Job Number
19 October 1995

Date _____

Gun: Remington, 700X, .30-06, New (a), 6212692
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 65 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. Remove gun from chamber and fire one sequence. Repeat conditioning with gun upside-down and firing sequence.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Failure-to-fire. Sear Safety Cam jammed downward preventing cocking of the firing pin. Manipulation of the Sear Safety Cam and Safety cleared the jam.

01-32D Static Dust

MA2898

H.P. White Laboratory Inc.

6793-02

-DYNAMIC DUST TEST-

(Paragraph 4.5.5.1 of TOP 3-2-045)

HPWLI Job Number

20 October 1995

Date _____

Gun: Remington, 700X, .30-06, New (a), 6212692
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 64 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. From within the conditioning chamber fire one sequence. Remove gun from conditioning chamber, reload, recondition and fire a second sequence.

[illegible]

MARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.

B22

01-32E Dynamic Dust

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2899

H.P. White Laboratory Inc.

-HIGH TEMPERATURE TEST-
(Paragraph 4.5.2 of TOP 3-2-045)

6793-02

HPWLI Job Number

6 October 1995

Date _____

Gun: Remington, 700X, .30-06, New (a)(c), 6212893
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: +160 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Conduct firing tests from within conditioning chamber in accordance with specified firing cycle.

[illegible]

MARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on.
(c) Fitted with blued steel trigger and safety.

H.P. White Laboratory Inc.

-LOW TEMPERATURE TEST-
(Paragraph 4.3.2 of TOP 3-2-045)

6793-02

HPWLI Job Number
9 October 1995

Date

Gun: Remington 700X .30-06 New (a)(c) 6212893
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: -50 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Remove gun and sufficient ammunition to fire one firing sequence and immediately fire that sequence in ambient environment (+70°±5°F) at specified rate of fire. Return gun to conditioning chamber for two hours and fire second sequence. Repeat two hour conditioning and firing sequence until specified firings are completed.

Sequence		Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppes	Breakage	Class	Attrib.	EPR
O.	Rds.						Type	Rd. No. (s)	Cause					
01	05					None		None						
02	05					None	FFR	6	(d)	Y	N	G		
					-End of Test-									

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on.
(c) Fitted with blued steel trigger and safety.
(d) Failure-To-Fire. Jammed (Frozen) firing pin freed and fired on second attempt.

B24

01-32B Low Temperature

Confidential - Subject
to Protective Order
Williams v. Remington

MA2901

H.P. White Laboratory Inc.

6793-02

-WATER SPRAY TEST-
(Paragraph 4.5.4 of TOP 3-2-045)

HPWLI Job Number
11 October 1995

Date

Gun: Remington 700 X .30-06 New (a)(b) 6212893
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 70 (°F), Conditioning Time: NA (Hrs.)

Test Description: Clean and lubricate gun. Expose to overhead water spray rate of 0.4 inch per minute and conduct firing sequence in accordance with following schedule:

Horizontal Orientation, With loaded magazine, empty and open chamber - 5 minutes.
With loaded magazine, loaded and closed chamber - 5 minutes.
Open and drain chamber and fire one sequence.
Repeat horizontal exposure and firing sequence.

Muzzle-Up Orientation, Repeat entire Horizontal Orientation Test.

Muzzle-Down Orientation, Repeat entire Horizontal Orientation Test.

Sequence		Ammo	Mag.	Velocity(fps)	Cyclic R. (Spm)	Yaw	Malfunctions		Stoppage	Breakage	Class	Attrib.	EPR
No.	Rds.						Type	Rd. No.(s)					
1H	05					None		None					
1	05					None		None					
3U	05					None		None					
J	05					None		None					
1	05					None		None					
6D	05					None		None					
-End of Test-													

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Fitted with blued steel trigger and safety.

B25

01-32C Water Spray

Confidential - Subject
to Protective Order
Williams v. Remington

MA2902

-MUD TEST NUMBER 1-
(Paragraph 4.5.6.2.1 of TOP 3-2-045)

HPWLI Job Number
17 October 1995

Date: _____

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

[illegible]

MARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Fitted with blued steel trigger and safety.
(d) Failure-to-feed (bolt override). Magazine cleared and feeding restored on second attempt by pushing down on cartridges.
(e) Bolt difficult to operate.

01-32F Mud Test

01-32F Mud Test #1

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2903

H.P. White Laboratory Inc.

-MUD TEST NUMBER 2-
(Paragraph 4.5.6.2.2 of TOP 3-2-045)

6793-02
HPWLI Job Number
18 October 1995
Date

Gun: Remington, 700 X, .30-06, New (a)(c), 6212893
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr. SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 69 (°F), Conditioning Time: 4-1/60 (Hrs.)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Place conditioned gun and unprotected ammunition in 70°±5°F environment for four hours. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

[illegible]

MARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Fitted with blued steel trigger and safety.
(d) Failure-to-feed (bolt override). Ammunition in magazine depressed and feeding restored on second attempt.
(e) Bolt difficult to operate.

01-32G Mud Test #1

01-32G Mud Test #2

B27

**Confidential - Subject
to Protective Order
Williams v. Remington**

MA2904

H.P. White Laboratory Inc.

6793-02

-STATIC DUST TEST-

(Paragraph 4.5.3.2 of TOP 3-2-045)

HPWLI Job Number
19 October 1995

Date _____

Gun: Remington, 700X, .30-06, New(a)(c), 6212893
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 62 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. Remove gun from chamber and fire one sequence. Repeat conditioning with gun upside-down and firing sequence.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Fitted with blued steel trigger and safety.
(d) Failure-to-feed (bolt override). Ammunition in magazine depressed and feeding restored on second attempt.

H.P. White Laboratory Inc.

6793-02

-DYNAMIC DUST TEST-

(Paragraph 4.5.5.1 of TOP 3-2-045)

HPWLI Job Number
23 October 1995

Date _____

Gun: Remington, 700X, .30-06, New (a)(c), 6212893
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 60 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. From within the conditioning chamber fire one sequence. Remove gun from conditioning chamber, reload, recondition and fire a second sequence.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Fitted with blued steel trigger and safety.

B29

01-32E Dynamic Dust

Confidential - Subject
to Protective Order
Williams v. Remington

MA2906

H.P. White Laboratory Inc.

-HIGH TEMPERATURE TEST-
(Paragraph 4.5.1 of TOP 3-2-045)

6793-02
HPWLI Job Number
5 October 1995
Date

Gun: Remington, 700 X, .30-06, New(a)(c), 6213209
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: +160 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Conduct firing tests from within conditioning chamber in accordance with specified firing cycle.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on.
(c) Fitted with blued steel trigger and safety.

H.P. White Laboratory Inc.

6793-02

-LOW TEMPERATURE TEST-
(Paragraph 4.5.2 of TOP 3-2-045)

HPWLI Job Number
9 October 1995
Date

Gun: Remington, 700 X, 30-06, New (a)(c), 6213209
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: -50 (°F), Conditioning Time: 6 (Hrs.)

Test Description: Clean and lubricate gun. Condition loaded gun and required additional cartridges in loaded belts or magazines (if appropriate) for specified time at specified temperature. Remove gun and sufficient ammunition to fire one firing sequence and immediately fire that sequence in ambient environment ($+70^{\circ}\pm 5^{\circ}\text{F}$) at specified rate of fire. Return gun to conditioning chamber for two hours and fire second sequence. Repeat two hour conditioning and firing sequence until specified firings are completed.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on.
(c) Fitted with blued steel trigger and safety.
(d) Failure-To-Extract fire case. Extracted on second attempt.

B31

01-32B Low Temperature

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Williams v. Remington**

MA2908

H.P. White Laboratory Inc.

-WATER SPRAY TEST-
(Paragraph 4.5.4 of TOP 3-2-045)

6793-02
HPWLI Job Number
11 October 1995
Date

Gun: Remington 700X 30-06 New (a)(b) 6213209
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington 125.0 gr., SP B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 70 (°F), Conditioning Time: NA (Hrs.)

Test Description: Clean and lubricate gun. Expose to overhead water spray rate of 0.4 inch per minute and conduct firing sequence in accordance with following schedule:

- Horizontal Orientation, With loaded magazine, empty and open chamber - 5 minutes.
- With loaded magazine, loaded and closed chamber - 5 minutes.
- Open and drain chamber and fire one sequence.
- Repeat horizontal exposure and firing sequence.
- Muzzle-Up Orientation, Repeat entire Horizontal Orientation Test.
- Muzzle-Down Orientation, Repeat entire Horizontal Orientation Test.

Sequence		Ammo	Mag.	Velocity (fps)	Cyclic R. (Spm)	Yaw	Malfunctions			Stoppage	Breakage	Class	Attrib.	EPR
No.	Rds.						Type	Rd. No. (s)	Cause					
1H	05					None		None						
2H	05					None		None						
3U	05					None		None						
4U	05					None		None						
5D	05					None		None						
6D	05					None		None						
End of Test														

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Fitted with blued steel trigger and safety.

B32

01-32C Water Spray

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MA2909

-MUD TEST NUMBER 1-
(Paragraph 4.5.6.2.1 of TOP 3-2-045)

HPWLI Job Number
16 October 1995
Date

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

[illegible]

MARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Fitted with blued steel trigger and safety.
(d) Bolt difficult to operate.
~~(e) Failure to feed. Magazine freed by pushing down on cartridge and releasing. Feeding restored on second attempt.~~

01-32F Mud Test

01-32F Mud Test #1

MA2910

-MUD TEST NUMBER 2-
(Paragraph 4.5.6.2.2 of TOP 3-2-045)

6793-02
HPWLI Job Number
17 October 1995
Date

Conditioning Temperature: 68 (°F), Conditioning Time: 4-1/60 (Hrs.)

Test Description: Clean and lubricate gun. Tape the muzzle of a fully loaded gun with loaded and closed chamber and immerse in mud with second full load of unprotected ammunition for 60 seconds. Remove from mud and clean the closed gun and unprotected ammunition with bare hands only. Place conditioned gun and unprotected ammunition in 70°±5°F environment for four hours. Fire one sequence. Without further mud exposure, reload gun and fire second sequence.

[illegible]

MARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Fitted with blued steel trigger and safety.
(d) Bolt difficult to operate.
(e) Failure-to-feed (bolt override). Rounds in magazine depressed, clearing the stoppage and restoring feed on second attempt.

01-32G Mud Test #2

B34

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Williams v. Remington**

MA2911

H.P. White Laboratory Inc.

HPWLI Job Number
19 October 1995
Date

HPWLI Job Number
19 October 1995
Date

Gun: Remington / 700X / .30-06 / New(a) (c) / 6213209
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 65 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. Remove gun from chamber and fire one sequence. Repeat conditioning with gun upside-down and firing sequence.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Fitted with blued steel trigger and safety.
(d) Failure-to-fire. Sear Safety Cam jammed downward preventing cocking of Firing pin. Freed by manipulation.

01-32D Static Dust

MA2912

MA2912

H.P. White Laboratory Inc.

-DYNAMIC DUST TEST-
(Paragraph 4.5.5.1 of TOP 3-2-045)

6793-02

HPWLI Job Number

20 October 1995

Date

Gun: Remington, 700X, .30-06, New (a)(c), 6213209
(Make) (Model) (Caliber) (Condition) (Serial Number)

Ammunition: Remington, 125.0 gr., SP, B15KC3225
(Make) (Type) (Lot Number)

Conditioning Temperature: 64 (°F), Conditioning Time: 2/60 (Hrs.)

Test Description: Clean and lubricate gun. Expose fully loaded gun, with loaded and closed chamber to blowing sand for one minute. From within the conditioning chamber fire one sequence. Remove gun from conditioning chamber, reload, recondition and fire a second sequence.

[illegible]

REMARKS: (a) Fitted with Modified Fire Control Group.
(b) Gun conditioned with loaded and locked chamber and safety on and muzzle taped closed.
(c) Fitted with blued steel trigger and safety.

B36

01-32E Dynamic Dust

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MA2913

"ONE TEST IS WORTH A THOUSAND EXPERT OPINIONS."

— THE RIEHLE AXIOM



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MA2914