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Remington Arms Company Inc.
RESEARCH & DEVELOPMENT TECHNICAL CENTER
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3.4.1.2 TLW0010AI – Cold Function Test

This test evaluates the effect of extreme low temperature on the function of the product. This test simulates storage in a vehicle during cold weather or carrying the firearm into the field during winter weather. The test rifle was pre-conditioned at -20°F for at least six hours. Every two hours thereafter twenty rounds were fired in the rifle. Between cycles the rifle was re-cooled for two hours.

The first round was a misfire. On the 23rd & 89th round the bolt would not close. The precise reason for these malfunctions was indeterminate.

3.4.1.3 TLW0010AJ – Thermal Cycle Test

This test evaluates the effects of large temperature changes due to expansion and contraction differentials of metallic and non-metallic components used in the Model 710. The sample rifle was alternately cycled between a temperature of 120°F and -20°F for three cycles. Time at each temperature was at least 24 hours. At the completion of the three complete cycles the rifle was allowed to return to ambient temperature for at least six hours. At that time 100 rounds of ammunition were fired in the rifle after which the rifle was examined for any obvious signs that thermal cycling had affected the component parts such as cracking or material creep. Rifle A-11 was used for this test and no problems were noted after the completion of the 100 round test. This test was completed during Phase I and was not repeated during Phase II. (See Section TLW0010AJ; B.1)

3.4.1.4 TLW0010AK – Heat & Humidity Test

This test evaluates the potential effects of high heat and humidity on the function of the product such as might be found in a tropical environment. The subject rifle was placed in a large environmental test chamber for a minimum of six hours. The temperature in the chamber was set at 100°F with a relative humidity of 80-90%. After the six-hour storage time the rifle was shot 20 rounds at two hour intervals until 100 rounds total were expended in the rifle.

TIME	ROUNDS FIRED	CHAMBER TEMP.	HUMIDITY	COMMENTS
8:00	20	99°F	97 %	Bolt very stiff to operate
10:00	20	101°F	95 %	Bolt very stiff to operate
12:00	20	99°F	94 %	Bolt very stiff to operate
2:00	20	101°F	100 %	Bolt very stiff to operate
4:00	20	102°F	98 %	Bolt very stiff to operate

No other problems were noted. (See Section TLW0010AK; B.1)

Jan 2001 Design Acceptance Test Remington M710 Centerfire Rifle;
R & D Technical Center Project No. 241039; TLW 0100
file: E:\Test Reports\Firearms Tests\M710_DAT_REPORT_JAN01_Rev1.doc

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