

**Remington.**  
R & D Technical Center  
Elizabethtown, Kentucky

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Issued: 2/16/05  
Project #: 241230  
TLW #: 1731

Correct date

**Remington Model 710**  
**Bolt Action Centerfire Rifle**

Short

Review & Mark H.

Report

Please review at your  
convenience. I will file  
away once you approve.

Report prepared by:

M. T. Hammond signed copy on file

Thanks,

Mark

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ET27601

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R & D Technical Center  
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Issued: 2/16/05  
Project #: 241230  
TLW #: 1731

Correct date

**Remington Model 710**  
**Bolt Action Centerfire Rifle**

**Short Receiver Insert Qualification Report**

R & D Technical Center Project # 241230  
R & D Test Lab Work Request #1731

Scott,

Please review at your  
convenience. I will file  
away once you approve.

Report prepared by:

M. T. Hammond signed copy on file

Thanks,

Mark

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## INTRODUCTION

The model 710 bolt action rifle was originally designed and manufactured with a plastic receiver insert that extended the full length of the action (see figure 1 below). This plastic insert acted as the bearing surface for the bolt during cycling of the action and as the attachment point for the trigger assembly. While no major quality concerns existed with the original design, changes were made to improve customer quality perception. These improvements are being marketed in the 2005 catalog as "smoother bolt operation and long lasting performance".

The new receiver insert is substantially shorter than the original and now functions mainly as an attachment point for the trigger assembly and as an end cap for the receiver (see figure 2 below). The receiver itself is now a steel extrusion with the same inner profile as the old style insert (i.e. the bolt lug ways are now in the steel portion of the receiver). The metal on metal contact between the bolt and the receiver creates less resistance during operation than the old design. Although no long term durability studies have been performed at this time, the new design would also theoretically be more durable over many thousands of cycles.



*Figure 1: Model 710 Long Insert (old)*



*Figure 2: Model 710 Short Insert (new)*

## PURPOSE & SCOPE

The purpose of this testing was to qualify the new short receiver insert for mass production. The critical control points for the insert assembly are the engagement distance between the sear and the firing pin, the clearance between the trigger and trigger guard, and proper fit with both the receiver and stock. Each gun was inspected for these items as well as tested for function with an assortment of ammo types totaling 100 rounds per gun. One gun was subjected to an additional 400 rounds to assess function over a longer period of use.

## SAMPLE DESCRIPTION

The sample for this test consisted of 10 firearms consecutively numbered A-1 to A-5 (non-magnum calibers) and A-31 to A-35 (magnum calibers). A list of each gun's serial number and tests to which it was subjected can be seen in the table on the following page. Where relevant, other information related to specific firearms will be documented in this report. If more detailed

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information is desired, the R&D test lab can be contacted to review copies of the original "Daily Test Data Sheets" as generated by the testing technicians and engineers.

Table 1: Test Matrix by Gun

Gun #, Serial #	A-1, 71202770	A-2, 71202775	A-3, 71203229	A-4, 71202780	A-5, 71203237	A-31, 71202744	A-32, 71202753	A-33, 71203001	A-34, 71202778	A-35, 71203034
Test Description										
Install Production Molded Inserts	●	●	●	●	●	●	●	●	●	●
Inspect Fit of Inserts	●	●	●	●	●	●	●	●	●	●
Measure Sear/Firing Pin Engagement	●	●	●	●	●	●	●	●	●	●
Inspect Trigger to Trigger Guard Clearance	●	●	●	●	●	●	●	●	●	●
100 Round Function Check	●	●	●	●	●	●	●	●	●	●
500 Round Function Check										●

## RESULTS SUMMARY

All portions of the testing produced favorable results. Fit between the insert and all mating components was found to be acceptable. Sear engagement of the firing pin was found to be within the permitted range and no malfunctions of any kind were noted during the function testing. The objective data produced during this testing can be seen in the following tables. In conclusion, the Remington R&D Center found this design change to be ready for mass production. This was conveyed to the Mayfield plant via a letter from Scott Franz on (enter date).

Table 2: Sear to Firing Pin Engagement Data

Sear Engagement Range		
Gun	Max	Min
A-1	0.085	0.075
A-2	0.082	0.072
A-3	0.085	0.075
A-4	0.084	0.074
A-5	0.082	0.072
A-31	0.082	0.072
A-32	0.083	0.073
A-33	0.083	0.073
A-34	0.084	0.074
A-35	0.085	0.075
Min	0.082	0.072
Max	0.085	0.075
Average	0.0835	0.0735

let me know  
when this was.  
If you want  
we can attach  
to report.

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Table 3: Function Test Data

Gun	Caliber	Index Number	Description	Rnds Fired
A-1	.30-06	SA30064	Obsolete SAAMI Reference Ammo	20
		R30065	Express, Core-Lokt PSP 180gr	60
		PRC3006A	Premier, Core-Lokt Ultra PSP 150gr	20
		TOTAL:		100
A-2	.30-06	SA30064	Obsolete SAAMI Reference Ammo	20
		R30065	Express, Core-Lokt PSP 180gr	60
		PRC3006A	Premier, Core-Lokt Ultra PSP 150gr	20
		TOTAL:		100
A-3	.30-06	SA30064	Obsolete SAAMI Reference Ammo	20
		R30065	Express, Core-Lokt PSP 180gr	60
		PRC3006A	Premier, Core-Lokt Ultra PSP 150gr	20
		TOTAL:		100
A-4	.30-06	SA30064	Obsolete SAAMI Reference Ammo	20
		R30065	Express, Core-Lokt PSP 180gr	60
		PRC3006A	Premier, Core-Lokt Ultra PSP 150gr	20
		TOTAL:		100
A-5	.30-06	SA30064	Obsolete SAAMI Reference Ammo	20
		R30065	Express, Core-Lokt PSP 180gr	60
		PRC3006A	Premier, Core-Lokt Ultra PSP 150gr	20
		TOTAL:		100
A-31	.300 Win. Mag	SA30WM2	Obsolete SAAMI Reference Ammo	40
		RL300W1	Managed Recoil, Core-Lokt PSP 150gr	20
		R300W2	Express, Core-Lokt PSP, 180gr	40
		TOTAL:		100
A-32	.300 Win. Mag	SA30WM2	Obsolete SAAMI Reference Ammo	40
		PRC300WA	Premier, Core-Lokt Ultra, PSP 150 gr	20
		R300W2	Express, Core-Lokt PSP, 180gr	40
		TOTAL:		100
A-33	.300 Win. Mag	SA30WM2	Obsolete SAAMI Reference Ammo	40
		PRC300WA	Premier, Core-Lokt Ultra, PSP 150 gr	20
		R300W2	Express, Core-Lokt PSP, 180gr	40
		TOTAL:		100
A-34	.300 Win. Mag	SA30WM2	Obsolete SAAMI Reference Ammo	20
		RL300W1	Managed Recoil, Core-Lokt PSP 150gr	20
		PRC300WA	Premier, Core-Lokt Ultra, PSP 150 gr	20
		R300W2	Express, Core-Lokt PSP, 180gr	40
		TOTAL:		100
A-35	.300 Win. Mag	SA30WM2	Obsolete SAAMI Reference Ammo	20
		RL300W1	Managed Recoil, Core-Lokt PSP 150gr	20
		R300W2	Express, Core-Lokt PSP, 180gr	460
		TOTAL:		500

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Williams v. Remington