



REMINGTON ARMS COMPANY, INC.



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SPORTING FIREARMS, AMMUNITION

TRAPS TARGETS

POWER TOOLS

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POWER TOOLS, PARK FOREST, ILL.

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BRIDGEPORT, CONN.
TRAPS AND TARGETS, FINDLAY, OHIO
CABLE - HARTLEY, BRIDGEPORT

ny/11/64

...answering your request...

*Wayne Reek
This is what we are saying now,
How can we make it stronger.
F. Hutchinson*

You were one of several interested readers of our recent advertisement headlined "Look your bolt in the face" to ask for more details on comparative proof-tests on rifle bolts...and here they are. Attached to this letter is your copy of Strength Test Report CFB-61-0037, containing results of tests mentioned in the advertisement. Here's how and why such tests are conducted:

We periodically test rifles made by all major foreign and domestic manufacturers, including Remington, subjecting guns with all types of bolts to a series of progressively severe test procedures. Rifles are fired with overloads of powder, with split cartridges, with obstructed barrels, etc.

Every rifle we've tested registers a failure at a less severe test-step than is safely passed by Remington rifles built with our patented Remington bolt. Due to the fact that the Remington bolt-face shroud completely surrounds the cartridge head with a solid ring of steel, Remington rifles safely withstand the test procedures that damage or destroy all the other rifles.

As the Report tells you - and as all gunsmiths, gun designers, gun manufacturers and firearms experts have long realized any center fire rifle with an "unsupported" cartridge head is at the mercy of the strength of the cartridge case. The patented Remington bolt, which alone among all the bolts in the world provides this support, is not dependent on the strength of the cartridge case - and it thus can successfully withstand the tests no other type of bolt can pass.

Now, read the Report. As you'll see, our claim is as well reinforced as a Remington bolt itself. Thank you again for your interest in our product. We'd like to take this opportunity to wish you "good shooting."

Sincerely,

F. Hutchinson
Manager - Advertising
Firearms

SRHutchinson/ecc
Attch.

S T R E N G T H T E S T R E P O R T

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Summary

In the testing of Remington Model 700 series bolt action rifles and rifles of various domestic and foreign manufacture, it was found that uncontrolled breech gas pressures induced by the progressive-severity-step test conditions placed all guns other than Remington 700 series in the dangerous category so far as the shooter is concerned.

None of the other rifles tested was constructed with a bolt design giving complete circumferential support to the cartridge.

It is to be concluded that any center fire rifle that does not support the cartridge in its full length is at the mercy of the strength of the cartridge case.

Procedure

Each rifle was subjected to progressively severe tests as indicated below, resulting in damage or destruction noted as "Determining Final Strength of Gun."

Specific Cause of Gun Failures

In this type of test, failures occur when the cartridge case starts to flow at the head due to excessive pressure and consequent escape of gases around the bolt face. The large forces exerted by the high pressure gases on the larger areas of the receiver and bolt are the proximate causes of failure.

Test Conditions (Alphabetically progressive from "A" through "N")

Firing of guns with:

- "A" Split cartridge case
- "B" Split cartridge head
- "C" Excessive Pressure Load - 3.0 grams Proof Powder
- "D" " " " - 3.1 " " "

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Test Conditions (cont'd.)

"E"	Excessive pressure load - 3.2 grams proof powder.
"F"	" " " - 3.3 " " "
"G"	" " " - 3.4 " " "
"H"	Jammed cleaning patch in barrel 6" from chamber.
"I"	" " " " " 12" " "
"J"	Barrel plugged with one 220 grain bullet - excessive 3.4 gram load
"K"	" " " two " " " " " "
"L"	" " " three " " " " " "
"M"	" " " four " " " " " "
"N"	" " " five " " " " " "

Rifles Tested

1. Remington Models 721, 722, 725 and 700 (all have same patented bolt)
2. Domestic rifle W. (Sporting)
3. Domestic rifle G. (Military)
4. Domestic rifle S. (Military)
5. Domestic rifle O. (Sporting)
6. Foreign rifle JA (Japanese Military)
7. Foreign rifle BE (British Military)
8. Foreign rifle GM (German Military)

(Abridges list; rifles here listed represent in their varying bolt constructions many other bolt action military and sporting rifles of both domestic and foreign manufacture. Many of the guns tested, but not here listed, failed under test conditions ranging from "A" to "E")

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Test Condition Shere Failure Occurred	Rifle and Action Tested	Part or Parts Failing, Determining Final Strenght of Gun
"P"	Foreign rifle JA	Receiver (top breech ring section); portion of right locking lug.
"G"	Domestic rifle G	Bolt - both in the face and in the forward bottom section.
"J"	Domestic rifle S	Receiver - split on right side of breech ring through breech gas escape port.
"K"	Domestic rifle W	Stock split - locking lugs deformed - bolt face split
"L"	Domestic rifle O	Receiver disintegrated.
"L"	Foreign rifle GM	Bolt - face completely split and complete breakage of right bolt locking lug.
"M"	Foreign rifle BE	Receiver - left rail bulged.

--- NOTE ---
600 & X P 100

Remington Models 721, 722, 725 and 700 did not fail in strength; bolt could not be unlocked after testing under condition "N" (fired with 5 - 220 grain bullets plugging barrel.)

REMARKS

Some rifles had considerable difficulty in releasing breech gas pressure through gas escape ports located on top of receivers, during test condition "B", as proved by accumulations of large amounts of powder particles adhering to blotting paper placed at the rear of the breech.

Rifles with extractors forming an appreciable arc in the circumference of the bolt face seemed to have difficulty handling excessive pressure loads. Such extractors have little supportive effect on an expanding cartridge head.

Domestic sporting and domestic military rifles showed evidence that uncontrolled brass sections from the cartridge head had moved rearward down the bolt lug guideways in the receivers under early test steps. The condition became worse in succeeding test steps, leading in some cases to complete breakage of the bolt stop.