

REMINGTON
TESTING
FAILURES

Since the introduction of the Model 700 in 1962, Remington has received thousands of customer complaints of incidents of rifles firing without a pull of the trigger

Remington's consistent response has been one of the following:

- Somehow, the trigger was unintentionally pulled
- The maintenance of the rifle was unsatisfactory
- The rifle was adjusted out of Remington's specifications

Remington's internal test results
prove otherwise

1947 tests already revealed the potential of “*the firing pin moving forward when the bolt is closed*”

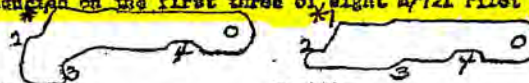
Remington Produced Document Bates # R2501016

DAILY PROGRESS REPORT

4/23/47

SUBJECT: M/721 Pilot Line Testing

A Product Inspection Test was conducted on the first three of eight M/721 Pilot Line Guns. Results are as follows:



Gun #	Firing Pin Protrusion	Firing Pin Indent	Position on Dwg.	Safety Cam	Position on Dwg.	Sear	Firing Pin Head	Head-Space	Trigger Pull
20532	Within Limits	Within Limits	1	Under Min.	1	Under Min.	.006" above Max.	Min.	Within Lim
			2	Max.	2	Over Max. to Under Min.			
			3	Max.	3	Max.			
			4	Min.	4	Min.			
20517	"	"	1	Under Min.	1	Under Min.	Within Limits	"	"
			2	Within Limits	2	Under Min. to Max.			
			3	" "	3	Lower Edge Max. Under Min. on Front Edg.			
			4	Min.	4	Under Min.			
20544	"	"	1	Under Min.	1	Under Min.	.002" below Min.	"	"
			2	Within Limits	2	Min.			
			3	" "	3	"			
			4	Max.	4	"			

*Limits used at Position #1 on both Safety Cam and Sear were the absolute Min. limits allowed by the designer to facilitate the use of available parts. All measurements were made on the comparator ratio of 10/1.

From the measurements made of the Firing Pin Heads, the condition of the firing pin moving forward when the Bolt is closed might present itself in Gun #20544 after a few rounds of firing.

There is evidence of the fire control adjusting screws moving out of position after normal functioning of the Bolt. This condition could develop into a dangerous situation and it is recommended that immediate steps be taken to stake or lock the screws into position after the fire control has been correctly adjusted.

Accuracy and functional firing of the above three guns is in progress and results of these tests will be forwarded as soon as practicable.

W. E. Leak
Test Engineer

WEL:NC

Remington recognized
immediately the gravity of this
with respect to its liability for
the safety of its product

Remington Produced Document Bates # R2501440

Mr. H. A. Brown

Mr. H. K. Mauldin

REMINGTON ARMS COMPANY, INC.

INTERDEPARTMENTAL CORRESPONDENCE

Remington
SUPER

PETERS
SUPER

Bridgeport, Connecticut

August 31, 1948

TO: MR. S. M. ALVIS,
From: MR. A. J. GREENE,
Subject: MODEL 721 SAFETY

The gun mentioned in your letter of August 27th was duly delivered to us by Mr. Pinckney, and is returned to him with his copy of this letter. We are unable to secure a malfunction of its safety, and deem its construction a substantial improvement over the model which we had previously examined.

Our usual potential liability for the safety of our product is somewhat augmented by our knowledge that some Model 721 safeties have malfunctioned. However, our liability does not seem to be out of proportion to the advantage of retaining the present sear and safety construction, pending receipt of further complaints from the field.

We note that in the production gun which you supplied the three adjustment screws in the trigger assembly are not staked, as they were in the earlier models. We believe it important that these screws, particularly the one which determines the amount of engagement of connector and sear, be so sealed as to afford a positive indication when our factory adjustment has been altered.

*our
8
wanted
Notified
H.A.M. - 4/7/48
1:50 p.m. 11/1/48*

AJG/m

A. J. GREENE
A. J. GREENE,
Patent Attorney.

Remington recognized the continuing benefit of analyzing internal results in the context of complaints from the field

Remington Produced Document Bates # R2501804

January 9, 1953

TO: W. A. Best

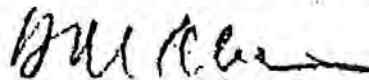
FROM: S. M. Alvis

SUBJECT: MODEL 721 QUALITY & ENDURANCE TESTING

Under date of January 5th, C. J. Theriault, of the Testing Unit, issued report of results covering the quality and endurance test for the Model 721 which was conducted by Research during 1952. In this connection, a conclusion was made with respect to adequacy of functioning. This conclusion was based on assumptions with respect to the original trial and pilot test as made for this model many years ago.

We have since discussed the matter with C. J. Theriault and believe have reached an agreement as to the fallacy of such a policy. In other words, we often assume certain calculated risks in connection with new models but only on basis of confidence that required standards of quality will be attained as production improvements are made. Then too, we must all agree that the complaints from customers is one of our principal yardsticks, especially as to "what will be acceptable", and we believe that everyone will agree that a 25 malfunction rate in a bolt action gun of this type is too high and that the results of any such tests should be carefully analysed in an effort to use the information to the best possible advantage towards improving our quality.

We have, therefore, suggested to C. J. Theriault that in future reports of this type, they will simply record and report on the factual results and, where practical, to give comparisons of previous testing. No attempt should be made to judge adequacy.



S. M. Alvis

Arms Research & Development Division

SM:LI

An ultimate “complaint from the field” occurred in 1968 in the form of an article which appeared in Consumer Reports



Varmint Rifles

THE FIVE CHECK-RATED MODELS WERE ACCURATE ENOUGH TO HIT SMALL VARMINTS AT LONG RANGES

The varmint hunter is in some ways more fortunate than his fellow Nimrods who go out for big game. He can usually hunt near home in any season and without limit on his bag; and some farmers, beset by crows, woodchucks and such, will allow the varminteer to shoot in their fields.

But while an old .30-30 may still bring home the venison, the varminteer needs a long-range precision rifle. It will normally be a rifle chambered for a cartridge with a rather heavy powder charge and a comparatively light bullet of small diameter. That combination results in a flat trajectory and long effective range—up to about 400 yards for some calibers—and in a bullet that tends to disintegrate when it hits an obstacle, rather than ricochet dangerously.

Varmint hunters have used many calibers, from the little .22 Long Rifle to the .280. At the lower extreme, you have a short-range cartridge with a slow-moving, high-trajectory bullet that ricochets easily—not suitable or safe for most varminting. At the other extreme, you have a big-game cartridge that has a large-diameter bullet with too high a trajectory for accuracy over long range, plus a lot of recoil and a report loud enough to make your ears ring and to startle someone taken unawares. In between is anyone's land. The venerable .22 Hornet is on the small side by today's standards and seems to have lost much of its popularity. And the famed .220 Swift, which delivered higher velocity and flatter trajectory than any commercial cartridge before or since, proved to have drawbacks. It was extremely loud, some claimed it tended to wear out Lytle valves, and its relatively light bullet was too easily deflected by the wind, among other things.

Among the most popular varmint-hunting cartridges today are the .222 Remington and the .22-250 Remington. The .222 has an effective range of up to about 300 yards and a relatively mild report; the .22-250 has a maximum effective range of about 400 yards, but a considerably bigger bang. On the advice of our consultants, we decided to limit our report largely to rifles of those two calibers. Two other calibers, the .243 Winchester and the .244 Remington, have been widely used for varmint shooting in the West. But they're a bit heavy for varmints smaller than the fox or fawn, and a bit loud for use away from the wide open spaces.

We purchased 13 models in 11 major brands. Eight rifles were .22-250s, and four were .222s (models available in both calibers were tested in .22-250). The other tested rifle, the popular Winchester 70, was not available in either cali-

ber at the time we purchased our test models, although it's now being made in .22-250. Our Winchester fired a .225 caliber bullet, slightly shorter in range than the .22-250.

All the models we tested are repeaters, except for the top-rated Ruger. That unique rifle has a dropping-block, single-shot action. You operate it by pushing down a hinged lever extending beneath the trigger guard.

The Rifle versus the varmint

Above all, the varmint rifle must be accurate. A bullet that hits the target a couple of inches off your aiming point can still bring down a deer, but it may completely miss a prairie dog, crow or woodchuck. To meet our consultants' standard of accuracy for a rifle often called upon to hit small targets at long distances, a rifle must be capable of grouping all its shots within a circle of about one inch diameter at 400 yards (one minute of angle, or MOA). We fitted each rifle with a high-quality, high-powered telescopic sight and, after a 50-shot "break-in," fired groups of five shots from a rest.

We tested all the rifles with commercial ammunition and checked most of them with carefully hand-loaded ammunition as well. As would be expected, the rifles fired with both types of ammo proved more consistently accurate with the hand-loaded type than with the commercial product. The check-rated Tradewinds, for example, shot slightly outside the MOA with commercial ammo, within the MOA with hand-loaded ammo.

Nine models were judged consistently capable of MOA accuracy with either type of ammunition. The B&R was only slightly outside the MOA limit; the Savage 310 and the similar Western Field were significantly further out.

We checked the .222 cases for excessive expansion. All checked out satisfactorily, indicating that cases fired in these rifles could probably be reloaded up to about 20 or 30 times.

While firing for accuracy, we judged the quality of the trigger pull and the smoothness and ease of operation of the bolt and the repeating mechanism. As a group, our varmint rifles exhibited better trigger performance than most guns of other types CU has tested in the past. That is as it should be since a good trigger pull—light and without noticeable creep—contributes greatly to the accuracy a varminteer must have. A pull of four or five pounds is about right. A heavier pull may cost you in steadiness; a lighter pull risks accidental discharge.

You may have to adjust the trigger pull—or have a gunsmith do it—once you get the rifle home. We judged the trigger pulls on most of the tested rifles a little heavy as received, but the pull was adjustable on all but the three lowest-ranked models. Where a trigger showed noticeable creep, it's mentioned in the Ratings.

The lightest trigger pull was on the Tradewinds, which has a double-set trigger. To set the front trigger, the one that fires the rifle, you must first pull the rear trigger rather hard (about seven pounds on our sample). Then the front trigger responds to a pull that can safely be set very light indeed. Ours was adjusted for less than a one-pound pull.

The five check-rated models were judged very good in both trigger pull and mechanical operation (see table, page 158) and, of course, they were judged consistently capable of meeting the minimum MOA criterion, at least with hand-loaded ammunition.

The sixth-ranked rifle, the Remington 700, exhibited a potentially dangerous flaw as first tested. There was so little clearance between the trigger and the trigger guard that when the trigger was pulled with the safety on (something you or a friend might do when sighting down the rifle or trying it for feel), the trigger sometimes failed to return to its forward position. And with the trigger in the back position, the rifle would fire without warning the next time the safety was moved to the fire position. The malfunction persisted for more than 100 firings before the trigger wore in and performed normally. An unwary buyer might have caused a serious accident by then.

Although we judged the deficiency more a simple defect than a design shortcoming, we nevertheless downrated the Remington 700 because of it. We would warn anyone buy-

ing a rifle to test the safety in the store. If the trigger can be moved with the safety on, make sure it returns to its full forward position after you pull it.

We also gave weight in the Ratings to checkering and other grip-improving devices. Those qualities affect not only the appearance of the rifle (an important matter to many purchasers) but also the ease of holding and firing. Good, sharp checkering helps you keep a firm grip; a raised checkpiece helps you position your head for a good sighting picture. The stocks of all but five models (Ruger, Savage 110C, Remington 700, Savage 340 and Western Field) had raised checkpieces, and all but the Remington 700 had checkered grips and fore-ends. Cut checkering (formed by actual removal of wood) generally provides a better grip than impressed checkering. The Ruger, Weatherby, S&W, Browning, Tradewinds, BSA and H&R models had cut checkering. The Winchester, Savage 110C, Savage 340 and Western Field had impressed checkering that we judged not sharp enough to help your grip much. The checkering on the Remington 700, though impressed, did provide enough friction to improve the grip.

Special needs, special features

The varmint hunter may drive around a good deal between shots, looking for his game. So he should be able to unload his rifle quickly, without working each cartridge through the action (it's dangerous to carry a loaded gun in a car, and usually illegal). With eight of the tested repeaters you could remove cartridges easily through a hinged floor plate at the bottom of the magazine. Five models had a removable box magazine, also judged satisfactory.

Rather than load and unload a magazine, many varmint

Mike Walker, the inventor of the Walker Fire Control, examined and tested the Consumer Reports rifle. After disassembling the rifle and examining it, “*the condition noted in the ‘Consumer Reports’ test was prevalent again*”

Bridgeport, Connecticut
March 11, 1968

TO: J. G. WILLIAMS
FROM: B. G. LARSON
SUBJECT: VISIT REPORT - CONSUMERS' UNION - MODEL 700 BDL 22/250

On March 8, Mike Walker and the writer met with Mr. Bert Strauss, of Consumers' Union, to examine the Remington Model 700 BDL caliber 22/250 Varmint Special rifle #262315. This rifle was involved in their test and report as published in the March 1968 issue of "Consumer Reports."

Mr. Strauss explained that when the rifle was received they fortunately noted prior to any firing tests, that when the trigger was depressed with the safety on, it would remain back, and the gun would fire when the safety was released. It was explained that after approximately 100 dry-firings the condition disappeared.

In our examination we found that there was some stickiness in the trigger release, although not enough to have the trigger remain back when pulled with the safety on.

Mike disassembled the rifle and examined all parts within the fire control and trigger guard to determine the cause. There was a bright spot on the side of the trigger cut in the trigger guard, indicating the possibility of the trigger rubbing at this spot. In further disassembly of the trigger housing, we found slight burrs in the trigger pin hole of the trigger and an extremely tight fit of the trigger pin in the housing, and a slight cramping on the various parts due to tightness in the housing.

Mike then re-assembled the trigger assembly and, when he replaced the action in the stock and tightened the front guard screw first, there was a distinct twisting motion of the action

in the stock and the condition noted in the "Consumer Reports" test was prevalent once again.

We then found that if the rear trigger guard screw was inserted first, the trigger assembly would operate normally; but, of course, due to the condition noted previously, once the front screw was tightened, the stresses remained.

We asked if we could replace or purchase the gun in question, and were advised that this was impossible due to policy. Their normal procedure is to sell all items tested to employees sometime after the tests are completed and the reports are issued.

It was agreed, however, that when this rifle was sold to an employee, it would be returned to the writer for repair prior to useage.

It was imperative that we make this offer because, if the gun were disassembled and the front guard screw replaced first, a dangerous condition could result.

Mike Walker will discuss the matter with Ilion production personnel and, if necessary, institute a new inspection procedure.

Internal testing identified other
“*extremely dangerous*” instances
when the rifle would fire with a
“*slight lift of the bolt*”

Remington Produced Document Bates # R2530380

DON'T SAY IT—WRITE IT

To S. M. ALVIS

DATE October 12, 1972

FROM M. H. WALKER

Subject MODEL 700 SEARS

Testing

(L)

The sear problem on the 700, 40XB, etc., discovered on the Left Hand pilot test, is one which is probably more serious than the Plant realizes.

Apparently a material change was made without adequate testing. Present sears develop up to 10# trigger pulls, and although none were reported, failures to fire could develop after only 1000 to 5000 dry cycles. Failures to fire are extremely dangerous as a slight lift of the bolt will generally fire the rifle. Present sears will not produce adequate trigger pulls on M/40XB rifles as assembled.

We have threatened to change the sear to wrought material in an attempt to get quick action. Sears of the old material are being fabricated. It is possible they are working as fast as they can. This should be checked again.

In response to field complaints, Remington tested the Model 600, a companion model with the Walker Fire Control. 74% of the rifles inspected exhibited the “*malfunction*” and would “*fire when the safety was moved from ‘on’ to ‘off’.*”

REMINGTON ARMS COMPANY, INC.

INTER-DEPARTMENTAL CORRESPONDENCE

Remington
CORPORATION

PETERS
CORPORATION

cc: W. E. Leek
A. D. Kerr

"CONFINE YOUR LETTER TO ONE SUBJECT ONLY"

February 7, 1975

TO: R. L. HALL *Huse*
RE: MOHAWK 600 SAFETY MALFUNCTION

Subsequent to a series of complaints from the Dallas, Texas area, it was found that if the Mohawk 600 was manipulated in a certain sequence some guns could be made to fire when the safety was moved from "on" to "off". Such guns could be made to fire if the safe was positioned between "full safe on" and "full safe off", the trigger firmly squeezed and released followed by manipulation of the safe.

As a result of this determination, the warehouse and assembly was held until the condition could be corrected. It was further determined that this condition existed in original design guns as well as "Manufacturing Sample" guns.

Analysis of the problem showed that the present design of the cam portion of the Safety contacting the rear end of the Sear Safety Cam was not in contact long enough for the Safety Detent to always snap forward to the "off safe" position. Thus, a fixture was set up to slightly "swage" this cam portion of the Safety to provide longer contact with the Sear Safety Cams.

Of the 2446 Mohawk 600 guns in the warehouse, 1945 have been inspected to date. Results have shown 511 or 26% did not exhibit the malfunction and were returned to the warehouse in their present condition. 1434 more have been repaired by replacing the Safety with a swaged Safety or new fire control, and returned to the warehouse. Shipments have been resumed and it is expected that inspection and repair of the remaining 501 warehouse guns will be complete by Feb. 10, 1975.

For future production, we will continue to use swaged Safeties in Mohawk 600 guns, including a test incorporating the manipulation which would show the malfunction if present. Research and Development personnel are reviewing possible design modifications to assure freedom from the condition.

C. B. Workman
Supt. P.E. & C.

E. R. Carr
E. R. Carr
Supt. Process Engineering-
Current Products

ERC:jc

Gallery Tests are quality control tests conducted by Remington on samples of finished rifles

Remington experienced many instances when rifles would fire in the absence of a trigger pull

Remington Produced Document Bates # R2506096

DON'T SAY IT—WRITE IT

TO GEORGE MARTIN

SAFETY MALFUNCTIONS
GALLERY

DATE 5-2-75

FROM ERIC BULLIS

MODEL	MALFUNCTIONS												TOTAL SAFETY MALFUNCTIONS BY MODEL			
	FSR			JO			FD			FOS				SWW		
40							4									4
1P 100							3									3
540																
541								2	1							3
580													1			1
581							3	2	1							6
582																
600	1						10	74	55							140
700	9						7	19	10	1			1			47
788	4						3	9	3	2	9	4	14	95	53	196
EARLY MALF. TOTALS	14						30	106	70	3	9	4	14	97	53	400

MALFUNCTION MEANINGS

FSR - FIRES WHEN SAFE IS RELEASED - SELF EXPL.

JO - JARS OFF (HAMMER FAILS TO STAY ENGAGED WITH SEAR AND FALLS DOWN WHEN GUN IS JARRED.)

FD - FOLLOWS DOWN (COCKING PIECE FAILS TO PROPERLY ENGAGE WITH SEAR AND FOLLOWS THE COCKING CAM SURFACE OF THE BOLT TO THE FIRED POSITION).

FOS - FIRES ON SAFE (GUN FIRES WITH SAFE IN "ON" POSITION WHEN TRIGGER IS PULLED).

SWW - SAFETY WON'T WORK - SELF EXPL.

* - 1975 DATA FROM DEC. 20, 1974 TO APRIL 29, 1975 ONLY.

Remington even created a set of
“demerits” to apply during
quality control testing

Remington Produced Document Bates # R2506210-11

August 27, 1975

FINISHED PRODUCT DEFECT INDEX

This booklet contains a list of typical demerit items used by Quality Audit.

Please use as a reference for your areas.


G. J. Hill
Supervisor Quality Control

GJH/kmk

DESCRIPTIVE INFORMATION

Finished Product Defect Index - Classification & Demerit Values

<u>I. Demerit Value</u>	<u>Definition</u>	<u>Examples</u>	<u>Model</u>
100	1. Safety hazard	Bbl. bracket separated from Barrel.	M/600, 700
	2. Product inoperable	Bbl. lug separated from bbl.	M/742, 760
	3. Proof mark missing on Bbl.	Bbl. separated from bbl. guide ring.	M/870
		Barrel separated from bbl. gas cylinder.	M/1100
		Broken firing pin.	All models
		Cracked extension.	M/11-48, 742, 760
		Fires on safe.	All models
		Fires when closing.	All models
		Jars off.	All models
		Action jams on live round	All models

A “Fires on safe,” “Fires when closing” or “Jars off” were all listed at the highest demerit level as “safety hazards”

In the midst of increasing complaints, Remington increased the number of times quality control rifles would be inspected for the defect

PROCESS RECORD CHANGE AUTHORIZATION

 PERMANENT CHANGE LONG DURATION ALTERNATE CHANGE

CHANGE NO.: 275943

EXPIRATION DATE:

INITIATED DATE: 5/10/77

ROUTE TO:

		APPROVALS	DATE
CONTROL OFFICE BLDG. 46-2			
METHODS & STDS. LEADER	J. Polivka	<i>[Signature]</i>	5/11/77
PROCESS ENGR. GROUP LEADER	J.		
PRODUCTION SUPERVISOR	W. E. Ackley	W. E. Ackley	5/11/77
AND PRODUCTION FOREMAN	H. E. Lynch	H. E. Lynch	5/11/77
CHEM. & MET. SUPERVISOR			
OR PROCESS ENGR. SUPERVISOR	G. J. Hill	G. J. Hill	5/11/77
CONTROL OFFICE BLDG. 46-2	B. D. Matusik	B. D. Matusik	5/11/77
	PROCESS RECORDS REVISED	H. Boyle	5/11/77

MODEL NO.: m/600, 700, 788

REQUESTED BY: G. H. Hill

PART NAME: 1) Gallery Test-Target

ENGINEER:

PART NUMBER: 2) INSPECTION BEFORE QUALITY AUDIT GALLERY TEST

DESCRIPTION OF CHANGE & REASON: CHANGE THE NUMBER OF TIMES THE FUNCTIONAL CHECK FOR SAFETY OPERATION IS PERFORMED, FROM ONE TO THREE TIMES.

CHECKING THE SAFETY FUNCTION THREE TIMES INSURES THE RELIABILITY OF THE TEST. TO AGREE WITH PRESENT PRACTICE.

COMPONENT STATUS AS AFFECTED BY CHANGE - CHECK TYPE

 USE PRESENT PARTS HOLD FOR SALVAGE SCRAP PARTS REWORK PARTS

Remington was fully aware that the “gun must not fire as Safe was moved to ‘off’” position

DATES AND REASONS FOR REVISIONS

1-30-67 - New Model. - HKB/cm

add note - perform check 3 times - #19 - JCH

DESCRIPTIVE INFORMATION

19. Safe - Function (PERFORM CHECK THREE TIMES)

- with Safe in forward "off" position.

a. Open and close Bolt for cocking - Handle down.

b. Move Safe rearward full stroke to "on" position.

1. Must operate with tension - no excessive bind - must clear stock in all positions.
2. Must operate with normal finger pressure.

- with Safe in "on" position.

c. Pull Trigger with firm pressure.

1. Gun must not fire with Safe "on".
2. Trigger movement is acceptable but trigger must retract.

d. Test raising Bolt Handle for cocking.

1. Bolt must be locked in closed position with Safe "on".

e. Move Safe to forward to "off" position.

1. Gun must not fire as Safe is moved to "off" position.

f. Pull Trigger - with Safe "off".

g. Push Safety Button forward from "off" position and remove Bolt from rifle.

1. Bolt must remove freely without bind.
- Insert Bolt into rifle
2. Must assemble freely without bind.

20. Trigger Pull

a. Open and close Bolt for cocking.

- pull Trigger.

1. Pull must be short and crisp.
2. Trigger must retract.

PART NAME	I. Inspection Before	COOLANT	SET UP TIME	MODEL No.	788
TYPE	Quality Audit Gallery Test.		MACH. HRS.	DEPT. No.	
			MACHINE		

Remington developed a “screw driver test” to test for the slip fit of the connector on the trigger body which can result in insufficient sear engagement.

Remington's internal testing showed a 56.67% failure rate for the "screw driver test."

Remington Produced Document Bates # R2543053

M-700 TRIGGER HOUSING

11-30-78 E.L.B.

Serial No.		Technician		Remarks	
Left	Right	Initial	Final	Initial	Final
00001	00001	OK	OK	OK	OK
00002	00002	OK	OK	OK	OK
00003	00003	OK	OK	OK	OK
00004	00004	OK	OK	OK	OK
00005	00005	OK	OK	OK	OK
00006	00006	OK	OK	OK	OK
00007	00007	OK	OK	OK	OK
00008	00008	OK	OK	OK	OK
00009	00009	OK	OK	OK	OK
00010	00010	OK	OK	OK	OK
00011	00011	OK	OK	OK	OK
00012	00012	OK	OK	OK	OK
00013	00013	OK	OK	OK	OK
00014	00014	OK	OK	OK	OK
00015	00015	OK	OK	OK	OK
00016	00016	OK	OK	OK	OK
00017	00017	OK	OK	OK	OK
00018	00018	OK	OK	OK	OK
00019	00019	OK	OK	OK	OK
00020	00020	OK	OK	OK	OK
00021	00021	OK	OK	OK	OK
00022	00022	OK	OK	OK	OK
00023	00023	OK	OK	OK	OK
00024	00024	OK	OK	OK	OK
00025	00025	OK	OK	OK	OK
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00029	00029	OK	OK	OK	OK
00030	00030	OK	OK	OK	OK
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00075	00075	OK	OK	OK	OK
00076	00076	OK	OK	OK	OK
00077	00077	OK	OK	OK	OK
00078	00078	OK	OK	OK	OK
00079	00079	OK	OK	OK	OK
00080	00080	OK	OK	OK	OK
00081	00081	OK	OK	OK	OK
00082	00082	OK	OK	OK	OK
00083	00083	OK	OK	OK	OK
00084	00084	OK	OK	OK	OK
00085	00085	OK	OK	OK	OK
00086	00086	OK	OK	OK	OK
00087	00087	OK	OK	OK	OK
00088	00088	OK	OK	OK	OK
00089	00089	OK	OK	OK	OK
00090	00090	OK	OK	OK	OK
00091	00091	OK	OK	OK	OK
00092	00092	OK	OK	OK	OK
00093	00093	OK	OK	OK	OK
00094	00094	OK	OK	OK	OK
00095	00095	OK	OK	OK	OK
00096	00096	OK	OK	OK	OK
00097	00097	OK	OK	OK	OK
00098	00098	OK	OK	OK	OK
00099	00099	OK	OK	OK	OK
00100	00100	OK	OK	OK	OK

Fails - 00015 Shim will not Pass connected to SRA.

Fails - Firing Pin Head will Fall when Safety Removed
OK - Firing Pin Head will not Fall when Safety Removed

In the midst of Remington's recall of the Model 600, a rifle equipped with the Walker Fire Control, Remington also considered recalling the Model 700

Remington's own investigation suggested that *only* 20,000 rifles were subject to the defect. Approximately 1 out of every 100 rifles in the field.

As a result, Remington
consciously concluded to
undertake the risk of defective
rifles in the market

E

LIMITED DISTRIBUTION

PRODUCT SAFETY SUBCOMMITTEE MEETING
JANUARY 2, 1979

PRESENT:

SUBCOMMITTEE

- E. F. BARRETT, CHAIRMAN
- J. G. WILLIAMS
- E. HOOTON, JR.
- R. A. PARTNOY

OTHER

- R. B. SPERLING, ACTING SECRETARY

SAFE GUN HANDLING

It was reported to the Committee that in 1975, due to what we learned from a quality audit on the Mohawk 600, Remington instituted new inspection procedures for all center fire bolt action rifles which were designed to catch a gun capable of being "tricked" into firing when the safety lever is released from the "safe" position. "Tricked" in this context means, safety lever placed in between "safe" and "fire" positions, trigger is then pulled, and the safety lever is subsequently moved to the "fire" position and the gun discharges. The inspection procedures involve the following:

- (1) A visual check for adequate clearance between the

PRODUCT SAFETY
SUBCOMMITTEE MEETING

JANUARY 2, 1979

product. Consequently, a notice warning or a series of warnings against abnormal use or misuse, and highlighting safe gun handling procedures, is the most direct solution to the problem of accidental discharge.

The Subcommittee considered the possibility of recalling all pre-1975 Remington center fire bolt action rifles, many of which have been in the hands of the public well over several decades.

The Subcommittee decided against a recall for the following reasons:

1. Based on Remington's sample, only 1% of the pre-1975 Model 700 family of guns out in the field which number about 2,000,000 can be tricked. That would mean the recall would have to gather 2,000,000 guns just to find 20,000 that are susceptible to this condition.
2. An attempt to recall all bolt action rifles would undercut the message we plan to communicate to the

Years later, Remington still knew
“Fire on Safety Release” was a
“malfunction”

Design Criteria:

1. Remove Adjustments
2. Preset Engagement
3. Preset Overtravel
4. Preset Trigger Pull
5. Retrofitability
6. Eliminate "Fire on Safety Release" malfunction
7. Balanced Trigger
8. Tamper Proof / Evidence of tampering
9. Force Engagement in "safe" position
10. 3lb. Trigger Pull
11. Manufacturable

Problems:

1. Trigger block plunger binds in trigger
2. Trigger shoe out of position
3. Hard safe "on" forces
4. Safe does not force trigger engagement
5. Safety can be removed in the field with no evidence.

In the mid-1990's, Remington's recognition of the severity of the malfunction again resulted in consideration of a recall

Remington Produced Document Bates # PR0375

Dear Remington Customer:

Remington has previously contacted you concerning a problem that may develop with your Model 700, Model Seven, or Model 40X rifle. The model and serial number of the involved rifle(s) is listed on the enclosed sheet.

W.A.H.
x6.
You have not yet responded to our contacts by sending in your rifle(s). This safety notice is being sent to be sure you understand that if your Model 700, Model Seven or Model 40X rifle is loaded, the gun may accidentally fire when you move the safety from the "safe" position to the "fire" position, or when you close the bolt.

It is very important that the rifle is returned to our factory immediately, so that we may inspect the rifle and replace the Trigger Assembly, if necessary. Please send (UPS C.O.D.) the rifle to:

Remington Arms Company, Inc.
DEPT. DSV
14 Hoefler Ave.
Ilion, NY 13357

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TO PROTECTIVE ORDER

WILLIAMS V. REMINGTON

Please mark the end flaps on the box: "Dept. DSV", which will insure that your rifle receives expedited service.

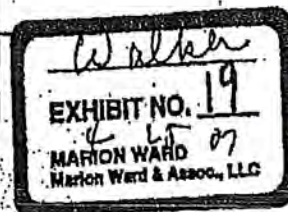
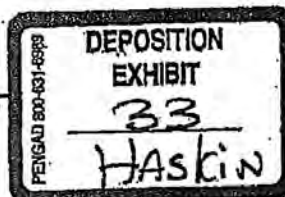
Remington wishes to be of service to you and prevent you from being held liable for any problem or injury that may be caused by your or other people's use of the rifle(s) described in this letter. Please help us be of service by either sending us the described rifle(s) or by calling our toll free number: 1-800-634-2459.

If you have already sent the rifle(s) to us, please disregard this notice and thank you for your cooperation.

Very Truly Yours,

PR 0375

Kenneth D. Green
Manager - Technical & Consumer Services



This notice never left the
building

In 1995, Remington commissioned H.P. White Laboratories, an independent consultant, to test the Model 700 rifle

The Model 700 failed the
environmental testing

The results mirrored complaints
from the field

TEST REPORT

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

Prepared For

Remington Arms Company, Inc.
Research and Development Technical Center
315 West Ring Road
Elizabethtown, Kentucky
42701

By

H.P. White Laboratory, Inc.
3114 Scarboro Road
Street, Maryland 21154

October 1995

MA2839

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.

Safety.

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".

Although conducted on the Model 710, another rifle equipped with the Walker Fire Control, the H.P. White experience was duplicated in Remington's internal testing of the new Model 710

Test Lab Work Request Form

Date Submitted: 10 March, 2000	Tracking #: TLW 0010AN
Project #: 241095	Engineer: J.R.SNEDEKER
Test Objective: TLW0010AN - Field Debris Test:	
This test determines the effect of "field debris" on firearm performance, where the firing is conducted after the firearm has field debris directly placed in the action. See Table No. 2 for field debris composition.	

Table No. 2 - Field Debris

Dried Grass Clippings
Toothpicks (ground 25

PROJECT # 241095

FIELD DEBRIS TEST

TRACKING # TLW 0010AN

- STEP # 1 CLEAN AND LUBRICATE TEST GUN.
- STEP # 2 REMOVE THE BOLT FROM GUN. SET THE SAFETY IN THE SAFE POSITION AND VERIFY THAT THE GUN IS UNLOADED.
- STEP # 3 WITH THE GUN BOTTOM SIDE UP APPLIED A TABLESPOON OF DEBRIS IN THE FIRECONTROL MECHANISM FROM THE BOTTOM.
- STEP # 4 TAPED THE GUN THREE TIMES IN THE MIDDLE OF THE RECEIVER, TO JAR THE GUN TO AID FIELD AND DEBRIS GETTING INTO THE MECHANISM.
- STEP # 5 TURN THE GUN TO ITS NORMAL UPRIGHT HORIZONTAL POSITION AND APPLY A TABLESPOON OF FIELD DEBRIS TO THE TOP OF THE FIRECONTROL MECHANISM.
- STEP # 6 TAPED THE GUN THREE TIMES IN THE MIDDLE OF THE RECEIVER, TO JAR THE GUN TO AID FIELD AND DEBRIS GETTING INTO THE MECHANISM.
- STEP # 7 WIPED AWAY ANY DEBRIS THAT WOULD PREVENT THE BOLT FROM CLOSING. CLEANED PARTS AS MUCH AS POSSIBLE BY BLOWING AWAY ANY DEBRIS.
- STEP # 8 REPLACED BOLT IN GUN. LOADED ONE LIVE ROUND IN CHAMBER AND CLOSED BOLT, SAFETY IN SAFE POSITION. LOADED FOUR ROUNDS OF LIVE AMMO IN MAGAZINE AND PUT INTO GUN.
- STEP # 9 CYCLED SAFETY FROM THE SAFE POSITION TO THE FIRE POSITION. WENT OUT OF ROOM AND PULLED TRIGGER WITH LANYARD (GUN FIRED)
- STEP # 10 WENT BACK INTO ROOM EJECTED FIRED CASE, CYCLED SAFETY FROM THE FIRE POSITION TO THE SAFE POSITION. CLOSED BOLT TO CYCLE LIVE ROUND FROM THE MAGAZINE. CYCLED SAFETY FROM THE SAFE POSITION TO THE FIRE POSITION. WENT OUT OF ROOM AND PULLED TRIGGER WITH LANYARD (GUN FIRED)
- STEP # 11 WENT BACK INTO ROOM EJECTED FIRED CASE, CYCLED SAFETY FROM THE FIRE POSITION TO THE SAFE POSITION. CLOSED BOLT TO CYCLE LIVE ROUND FROM THE MAGAZINE. CYCLED SAFETY FROM THE SAFE POSITION TO THE FIRE POSITION. GUN FIRED. STOP TEST DALE DANNER.

weighing.

Data Required:

- Record malfunctions. Gun fired on third round. (See report TLW 0010AN)
- Record number of rounds fired. 3 rounds
- Record weight of debris in the gun at the conclusion of the test. (See Mike Keeney)
- Record any firing of the firearm without the trigger being pulled. (See report)
- Record any hang fires. 0

9-16-00

Gun B22 TLW 0010 A.W

Put gun into field debris test
per ~~test~~ test description.

Put gun into shooting jack with
safety on - Tied lanyard to gun
through trigger housing, Loaded 1
round into chamber, closed bolt,
put 4 rounds into magazine and
installed into gun, put gun into
fire position - went out of fire,
pulled lanyard, gun fired, same
for second round, On third round
opened bolt to eject fired round,
~~and chambered a round to test~~

~~test~~ Put gun in safe position,
chambered round, closed bolt, put
safety into fire position - gun fired
without pulling trigger, stopped
test at this point per Dale Danner.

JW/SW

Then it happened again

Remington tells its own testing technicians to be prepared for the potential firing of a rifle during bolt closure, one of the scenarios that can result in a firing of the rifle without a pull of the trigger

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Remington Arms Company Inc.
RESEARCH & DEVELOPMENT TECHNICAL CENTER
315 WEST RING ROAD
ELIZABETHTOWN, KY 42701

Data Required:

- Record temperature and exposure times
- Record all malfunctions.
- Record damage noted during inspection

ABUSIVE TESTING

IMPACT TESTING – TLW0300AJ THROUGH TLW0300AM

TLW0300AJ – SLAM Test:

For this test the sample firearm will be placed in the standard Remington test jack. Four live rounds will be loaded into the rifle's magazine and the magazine installed in the rifle. The tester will use a glove for hand protection. Note: The ISS system should be placed in the unlocked (red dot visible) position for the duration of this test.

For each of the four rounds in the magazine the tester will close the bolt "smartly" – (i.e. as quickly as practical) – and be prepared for the rifle to inadvertently follow down or fire. After each bolt closing the round will be fired then the bolt will be opened and the spent round will be ejected and the next round in the box will again be loaded into the chamber in a "smart" manner. The purpose of this test is to determine if the firing pin will "follow-down" if the round is rammed home into the chamber as quickly as possible. Repeat this cycle until all 20 rounds of the test are completed. There should be no follow-downs or inadvertent firings.

Data required:

- Record whether or not the firearm fires or follows-down.
- Record round level on the firearm.
- Record the serial number of the rifle.

The general public is not given
the same warning

As recently as 2004, Remington was still tracking the “accidental discharge concerns”

Remington Produced Document Bates # MAE00012055

Charlotte Nations

From: Bristol II, Ronald H
Sent: 12/31/2004 08:38:15 AM
To: Nations, Charlotte
CC:
BCC:
Subject: FW: M/700,600, etc.

See me about some help I need

thanks

From: Supry, Fred L.
Sent: Thursday, December 30, 2004 11:20 AM
To: Bristol II, Ronald H; Dale Wills
Subject: M/700,600, etc.

12/30/2004

I have spreadsheets covering the accidental discharge concerns for the years 1992 - 2004.

Fred Supry
Manager
Product Service and Law Enforcement Training
Remington Arms Company

14 Hoefler Avenue

Ilion, NY 13357

In 2006, Remington introduced a new fire control, the “X–Mark Pro” or “Safety Pivoted Link.” It did not include a trigger connector and forced full engagement of the sear upon actuation of the safety.