

## THE COVER

This mighty rifle is typical of British elephant guns of the late 1800's. Made by Charles Osborne & Co., London, it has 26" barrels in 8-gauge or about .83 cal. It weighs 1634 lbs., which in itself explains the use of gun bearers, and is owned by Fred Davis, Jr., Falls Church, Va.

The background is genuine elephant hide from Hunter's World, New York. The tusk is a museum specimen and the broad knife is African.

Photo by American Rifleman Assistant Editor George Stallings on 4x5 Ektachrome with studio lighting.

Additional photos and article on pages 20-27.

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## MAJOR ARTICLES

Computer Tackles Gun Theft Problem Ronald W. Musselwhite		18
The Ecological Dilemma Over The PachydermsEditorial		19
Mighty Rifles Of The Past George A. Hoyem		20
Make That Dream Safari A Reality In Africa John A. Reese, Jr.		28
Why Magazine Big-Bore Rifles Are Best, Part IJacques P. Lott		30
Mountain Sickness And The Hunter		34
You Are Invited To Portland		35
Scope Your Way To Handgun AccuracyBob Milek		36
Our Great Outdoors		39
Damascening Adds Style To Bright Steel Bob Steindler		40
Test Your Moving Target Skills On The Jackrabbit Norm Nelson, Ir.		42
NRA Directors Advocate Fair Firearms Laws American Rifleman Staff		44
California Legislature Honors NRA Centennial		45
What's Going On Over Handguns American Rifleman Staff		46
Humphrey Backs Bayh Measure On Handguns		47
ATFD Defines Hand Grenade Enforcement		48
M16 Maker Is Defended In U.S. Senate American Rifleman Staff		49
Nomograph Simplifies Pattern Calcula	ations larry I cohneide	50
Waster Class Shooters Can Goof, Too	And Do	51
Remington Model 878 Shotgun	John E Einnauer	54
1972 Director Nominations	and Edding Olson	56
Dope Bag	NRA News and Events	84
	Rising Thefts Hit Gun Owners	20
A Court Case of Consequence 9 Shooting Champions	Skeet?	
The Armed Citizen 12	Lady Gunner	
Score Sheet	New Lifetime Memberships	94

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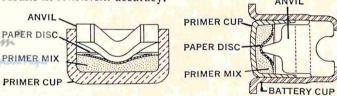
# One of a continuing series. Remington, Reports

# A primer is a little thing, but so is the 100th of an inch that makes a bench rest champion.

Over 80% of the top shooters at the 1970 National Bench Rest Shooters Association Nationals used Remington primers. Here's why, straight from Remington R&D.

For openers, here's what happens the moment the firing pin touches the primer . . .

The pin drives the cup toward the anvil. Almost instantly, the explosive mixture is violently compressed between the cup and anvil. The resulting explosion then ignites the main powder charge. It sounds simple. But the number of factors needed to make sure that primer goes off with the same results round after round is a little understood masterpiece of technology. Admittedly, there are few significant differences between one primer and another. But what differences do exist have a subtle effect on the kind of consistent shooting that results in consistent accuracy.



CENTER FIRE

SHOTGUN SHELL

The key to primer performance is "sensitivity"... making sure the primer consistently ignites with minimum striking force. And the key to primer sensitivity is the explosive

Some time ago, Remington engineers decided that lead styphnate should form the explosive base rather than the potassium chlorate-mercury fulminate mixture used then. As a result, two serious problems were solved. First, the residue from lead styphnate won't corrode the gun. Second, there is no mercury to attack the brass. (Which is why we call them "Kleanbore" primers . . . the name says it all.)

Along with the basic explosive (we make our own . . . from scratch) fuels, oxidizers and a sensitizer must be added. We use an organic explosive called "tetrazene" to increase the sensitivity of lead styphnate and to help make sure that misfires are virtually eliminated. Oxidizers and fuels are added to help control the violence of the explosion and to increase the ignition power and efficiency of the priming mixture. Basically, that's the explosive-mixture story. Except for one extra, exclusive touch: each Remington primer pellet is made with a tiny drop of shellac added to the mixture. The result is a degree of protection from moisture.

The smallest primer component—the anvil—also has a great influence on primer sensitivity. Anvils for center fire cartridges and shotshells were easier to design than the anvils used in pistol/revolver ammunition . . . because a rifle or shotgun hammer delivers more force. So, Remington engineers designed two special anvils for pistol and revolver ammunition. The embossed fin on one and the truncated cone on the other help improve anvil sensitivity.

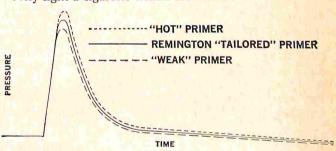


Center fire anvil

Shotgun shell anvil

Even though the tiny anvils are produced by the millions, each is made, and must conform to rigid specifications, to a minute fraction of an inch. And each is subject to close inspection.

The "hot" primer is something handloaders and shooters still argue about. But it makes sense to believe that if the hot primer really added to ballistics, Remington would be way out front with a hot primer. However, continuing Remington research leads us to conclude that a hot primer doesn't significantly improve ballistics or accuracy. It may add a few feet per second, but it also generates greater pressures . . . which isn't always a safe thing. If you're interested in improving ballistics and accuracy, you'll accomplish more by working with the front end of the cartridge instead of the rear. As one of our more philosophical research people put it: "Why light a cigarette with a blowtorch?"



As important as sensitivity is, so is uniformity. Uniformity of explosive mixture. (Even the size and shape of leadstyphnate crystals are controlled by Remington processes.) For example, consider "barrel time"... the time from the instant of primer ignition to the instant the bullet leaves the barrel. The uniformity built into every Remingon-Peters primer insures that, with everything else equal, barrel time is almost the same from primer to primer. So a shooter has a better chance of having the bullet leave the barrel, round after round, when that barrel is in the same position of its vibration arc. That's accuracy. And accuracy is what Remington-Peters primers are all about.

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