

SPECIAL WEAPONS Dec07

Title: Gun Test:

REMINGTON'S NEW 700P .308

Blurb: Solid ½-MOA sharpshooter — new and improved all the way!

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Since its introduction in 1962, Remington's classic Model 700 has been a mainstay of civilian, military and law enforcement users. The Model 700 action is so strong and easily enhanced for improved performance that it has served as the basis for both the US Army's and US Marine Corps' sniper rifles. The Army's M24 and Marines' M40 series and it is still serving on the overseas battlefields of the War on Terror and at home with police precision tactical marksmen. For law enforcement, various models of the 700 have always been among the precision tactical rifles most often chosen by police precision tactical marksmen. Before entering our evaluation of Remington's latest offering for law enforcement precision tactical marksmen, let's take a trip back in history and also examine the Model 700 Police lineup in general.

The Model 700 has been in service for nearly 50 years and shows no signs of being replaced, probably because it remains one of the best bolt action rifle designs in history and Remington keeps improving it, so today's 700 is actually better than older versions. Sporting models of the 700 are beyond the scope of this evaluation, but our readers should know that there are versions of the 700 available to suit just about every law enforcement requirement. Our test rifle is a basic 700P, so we'll leave a detailed description until later. The 700P TWS (Tactical Weapon System) adds a Leupold Vari-X III 3.5-10x40mm scope, a Harris bipod, a Michael's of Oregon sling and a Pelican hard case, the user just needs to add ammunition to begin shooting. The 700LTR (Light Tactical Rifle) has a shorter barrel and slimmed down stock to reduce weight. The 700 LTR is available in .223, .308 and .300RSAUM. The 700 LTR TWS, like the basic 700P TWS, is an "out of the box" system with Leupold Mk IV 3.5-10x40mm scope. The other features are identical to the 700P TWS.

Gun Details

The Remington 700P that's the basis of our test begins with the bolt action design. The bolt face, barrel and receiver serve to surround and support the cartridge with three concentric circles made of ordnance steel. The receiver is machined from a block of solid steel and drilled and tapped for scope mounts. Barrels are made by H-S Precision and are 26 inches in length with a match crown at the muzzle. 700P stocks are made of a composite of Kevlar and fiberglass by H-S Precision with a solid aircraft aluminum-bedding block that runs the entire length of the receiver. The stock has three sling swivel studs, two of which are typically used for the sling and the other for mounting a bipod. The base 700P is available in .223, .308, 7mm Rem Mag, .300Win Mag and .300 Rem Ultra Mag. The latter three cartridges use the 700 long action, while the first three use the 700 short action. Our test Model 700P appeared to be the same as many others we have seen in the past, but this new 700 is different!

While the original trigger wasn't bad, it usually had to be adjusted to suit the requirements of the user or replaced with an aftermarket trigger. We are pleased to report that those days are now history. Remington recently announced its X-Mark Pro trigger that takes the Model 700 to new levels of performance. At first, we were a little skeptical upon hearing Remington's claims that the X-Mark Pro trigger has out-of-the-box performance on a par with many custom triggers. However, after testing our 700P's new trigger, the skepticism was put to rest. So just how good is this new trigger? Remington

technical personnel state that production triggers will be set to a nominal pull weight of 3.5 to 5 pounds. Our test trigger broke like the proverbial glass rod with zero creep or backlash at 5.5 pounds, a bit higher than factory spec, but it felt lighter and rifle was remarkably accurate right from the box. With a proper break in and the trigger adjusted to a lower pull rate, the 700 PSS should be even more accurate. We were provided with a pre-production X-Mark Pro trigger that we had installed on another 700 PSS and group sizes dropped from just under 1 MOA using the original trigger to under 0.5 MOA with the X-Mark Pro. Yes, the X-Mark Pro is that good! So as to not keep you in suspense, our test 700PSS was a solid 0.5 MOA rifle with all brands of ammo tested.

We were able to confirm that Remington's claims about their remarkable new trigger were correct, but the next question was how they accomplished the magic? First there's an improved manufacturing process. Components can now be manufactured to closer tolerances using computer numerical controlled (CNC) machinery. Because of this, the internal components of the X-Mark Pro trigger have surface finishes that approach mirror smoothness and tolerances on a par with the best custom triggers. All components are electroless nickel-plated, a process that further enhances surface finish and helps produce an exceptionally crisp feel without any perceptible creep or backlash. As with earlier Remington 700 triggers, the X-Mark Pro blocks both the sear and trigger. Because of the foregoing improvements in manufacturing, the X-Mark Pro trigger can be set at the factory to be as much as 40 percent lighter than earlier triggers.

If our test trigger was any indication, Remington has taken the classic Model 700 to the next level of performance. The X-Mark Pro is simple, safe and most of all, effective. Remington has knocked one out of the park with the X-Mark Pro.

As Remington notes with its 700P TWS, a rifle, no matter how good it is, is only a part of a total shooting system that incorporates much more than the rifle, scope, sling and bipod. Because of this we set up every rifle we evaluate as a shooting system that's as close to what real precision tactical marksmen might choose for their personal duty weapon. We underwent basic law enforcement precision tactical training and have worked extensively with both military and law enforcement precision tactical marksmen, and so have a feel for what many choose for their personal shooting system. The operative word here is "personal." Most precision tactical marksmen of our acquaintance "tailor" their issue rifle to their personal tastes and operational requirements, and our shooting system consists of the following items that we'll expand upon herewith.

First was a mounting rail from Brownells. Our 700P was drilled and tapped, but had no mount. We prefer a MIL-STD-1913 mount that mates to our LaRue Tactical scope mount and so ordered a MIL-STD 1913 mount from Brownells. Our scope was a Horus Vision 3-12x. The Horus Vision targeting system makes use of a Palm PDA with ballistic programming to generate "come-up" cards. Although the Horus Vision reticle facilitates milliradian ranging, we decided to use the latest Leupold RX-II laser rangefinder. Besides the rifle's optics, the team must scan and spot and this requirement was again filled by Leupold with a pair of their Olympic 10x50mm binoculars and a 10-40 spotting scope, again with Horus Vision reticle. The team must know its climactic conditions for precise target engagement and for this we opted for a Kestrel 4000 pocket weather station. Finally, military and law enforcement operations are 24/7, so we obtained state-of-the-art night vision in both image intensifying and thermal.

With the generalities out of the way, let's move on to particulars. First, we are going to make a point that will probably bring down the wrath of many precision tactical marksmen out there, but we are convinced that MIL-Dot reticles are ready to be added to the trash heap of shooting history. Before you light your hair on fire and start making threats against the author, take a deep breath, relax and pay attention. MIL-Dots come in two versions, Army and USMC. They are slightly different in shape and dimension, but their purpose is the same, range estimation and holds for distance and windage. Trainees

are forced to make use of MIL-Dots, just as we were when we went through precision marksmanship training. All well and good for training, but we submit that technology has moved on and there are better ways to get the job done. First, today's laser rangefinders are much more accurate and dependable than early versions. Moreover, laser rangefinders like Leupold's RX II and RX III do much more than just indicate range. They also calculate true ballistic range when shooting on a slope, either up or down. Previously, this required a mathematical calculation that, while simple, took time. The RX rangefinders display this critical information instantly, which is especially valuable in operations where slope shooting is required, Northern Afghanistan comes to mind. Special Forces operators of our acquaintance tell us that they use laser rangefinders almost exclusively in this operational area because MIL-Dots just take too much time. In fact, every precision tactical marksman we know uses a laser rangefinder to determine target distance. So much for MIL-Dots as a primary ranging tool.

The other purpose of MIL-Dots is "hold overs" for distance and "hold offs" for windage. Once again, technology has overtaken MIL-Dots. In this case, MIL-Dots have been surpassed by the Horus Vision Sighting System (HVS). The HVS takes MIL-Dots to the next step with a targeting grid in standard milliradians, but with each milliradian subtended into 0.2 of a mil increments, so holds are much more precise than with MIL-Dots. The HVS grid can be used for precise holdovers and for windage adjustment without touching the adjustment knobs. Once the rifle is zeroed with the HVS, the elevation and windage knobs are never again touched. Of course, the HVS can be used for ranging, but why would one want to unless their RX rangefinder went down? Besides, the RX rangefinders cost so little and are so lightweight that a spare can easily be carried.

The HVS system consists of a scope in a variety of makes, including Leupold, US Optics, Zeiss and the HVS house brand manufactured by Hakko. The second part of the HVS system is the PDA with HVS ballistic software installed. Once the ballistic data are confirmed for the basic cartridge, the PDA can be used to calculate a come-up card for any load and the grid is used to determine holds, rather than "clicking" the windage and elevation knobs. All that's necessary is to enter the data, transfer the ballistic solution to the card and confirm zero. This is especially useful for shooters who must use both supersonic and subsonic ammunition. We have been using the HVS for over five years and will never return to MIL-Dots. Moreover, every precision shooter we know who has ever used the HVS has stated that they too will never go back to the antiquated MIL-Dot system. How good is the HVS system? The winning team of the US Army's annual sniper competition for three consecutive years used the HVS until the fourth year, when the system was declared "unfair" by the Army brass running the competition. Never mind that the HVS is available to anyone who wants to buy it! The HVS system also includes software for desktop or laptop computers. The final component is, of course, the laser rangefinder described above. With a HVS sighting system, any target that can be seen can be hit, much more quickly and accurately than with MIL-Dots, whose time we believe has come and gone.

We haven't space to go into details on night vision technology in detail as we have in the past, but there are two versions that are complimentary, not mutually exclusive, Image intensifying (I²) and thermal. I² night vision amplifies ambient light and the latest is Optical Systems Technology's (OSTI) AN/PVS-22 Universal Night Sight (UNS) in use by the US military. Don't be fooled! There are other companies that use the term "UNS," but only the OSTI product carries a military designation and national stock number. The others are "knock offs" that don't meet military performance standards. The other state-of-the-art night vision technology is thermal imaging that uses differences in invisible infrared (IR) heat to create an image. The advantage to thermal is that it needs no ambient light in order to function. Current state-of-the-art is Insight Technology's

Thermal Weapon Sight (TWS). The major disadvantage to thermal is that it costs approximately three times the price of an I² device, but we believe that the well-equipped tactical team should have both. Both the AN/PVS-22 and TWS mount ahead of the day optic and thus require neither adapters nor illuminated reticles and both can be used as hand held night vision devices as well as weapon sights.

Shooting Impressions

As with any other device, the proof of the pudding was shooting Remington's 700P and this rifle delivers the goods! The bolt operated smoothly with zero binding and feeding was flawless. As previously noted, accuracy was superb, despite the fact that we tested the rifle without breaking in the barrel and the trigger pull was on the high side, so once the rifle has a few hundred rounds through it, accuracy should be even better. Still, this latest Model 700 was surprisingly accurate with all brands of ammunition right from the box, with the tightest groups coming from Remington's 168-grain match at a solid half minute of angle. (0.5 inch at 100 yards) Groups with both Black Hills 168-grain match and Hornady 168-grain Tactical Application Police (TAP) were only marginally larger, both just over half an inch. As was to be expected with a bolt action rifle, especially one of Remington's Model 700s, reliability was 100 per cent and spent cases were positively and consistently ejected about three feet to the right.

Final Notes

In sum, our test Remington 700P was one of the most accurate out-of-the-box rifles we have ever tested. In fact, we cannot recall ever testing a precision tactical rifle at any price that was more accurate than our Remington 700P. To sum up, Remington's latest iteration of its classic 700P is better than ever and while you can pay a lot more for a precision tactical rifle, based on our test sample you just can't get one that shoots any better!

Specifications: REMINGTON 700P

Caliber: .223, .308, 7mm Rem Mag, .300Win Mag, .300Rem Ultra Mag
Barrel: 26 inches
OA Length: 46.5 inch
Weight: 9 pounds
Stocks: H-S Precision
Sights: None, drilled and tapped
Action: Bolt action
Finish: Textured black, non reflective finish
Capacity: 4(Short Action)/3(Long Action)-shot mags
Price: Call for pricing

Performance: REMINGTON 700P .308

<u>Load</u>	<u>Velocity</u>			<u>ES</u>	<u>SD</u>	<u>Accuracy</u>
	<u>High</u>	<u>Low</u>	<u>Average</u>			
Black Hills 168	2814	2672	2759	142	40	0.55
Hornady 168 TAP	2744	2722	2732	22	7	0.55
Remington 168 JHP	2822	2710	2781	112	32	0.50

Bullet weight measured in grains, velocity, ES (extreme spread) and SD (standard deviation) in feet per second (fps) by Oehler 35 Chronograph, accuracy in inches for average of two 3-shot groups from 100 yards.

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PHOTO CAPTIONS:

1-1A Remington 700P features new X-Mark Pro trigger. Accessories include LaRue mount that provides adapter for latest night vision optics such as OSTI AN/PVS-22 image intensifier and Insight Tech Thermal Weapon Sight (TWS) (Shown.)

- 2-2A Detail of receiver area shows LaRue tactical mount for 30 or 34mm diameter scopes.
- 3 700P barrel is manufactured by H-S Precision. Versa-Pod bipod allows instant change from prone length legs to longer legs for sitting position. Insight Technology Thermal Weapon Sight is latest in thermal imaging weapons sights.
- 4 Comb of standard stock was too low for author to achieve proper eye relief. Adhesive polymer cheek piece from Brownells resolved the issue.
- 5-5A 700P receiver area shows not only LaRue STOMP tactical mount that can accommodate 30 or 34mm diameter scopes and enables capability to mount latest night vision optics for rifles that do not have an extended MIL-STD-1913 receiver rail
- 6-6A Author send brass flying and lead downrange as he puts Remington 700P through its paces. Rifle was half minute accurate right from the box using ammo from three major manufacturers without break in.