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Warren Page
Shooting Editor
FIELD & STREAM
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Dear Warren:

Thank you for your most interesting article concerning the new Model XP-100 Pistol. Your style of writing is certainly different from the other sports writers and I think your type of writing keeps the interest of the sportsmen reading the top magazine Field & Stream.

I was extremely happy that you had good luck with your testing but would like to point out a few things that might be of interest to you in the development of this model. Being you're an old 5-shot one hole man at 100 yards from bench rest point of view, thought perhaps a little experimentation on your part might establish real fantastic accuracy with the XP-100 Pistol.

A few facts concerning the design, I believe, are in order, so that you can more seriously appreciate the thinking that went into it during the development. With your permission, would like to start with the muzzle end of the gun and work backwards. The barrel, which is approximately 10 1/2" long, contains some studs welded on top which support the sights and the rib. This welded technique is called projection welding, and the mating of the two parts takes place in such a short period of time that there is no effect to the interior surface of the barrel. The nylon rib is for two purposes only; one is appearance, and the other to take up space so that the sights do not appear to be too high.

Nylon, like any other plastic, will creep under load, and as far as the use of open sights are concerned mounting directly to nylon would be disastrous as they would become loose. The rear sight and front sight are mounted directly into the welded studs, with the nylon acting as a spacer. To keep the nylon from shifting or becoming loose we took advantage of this creep effect and molded the material .005 thicker than the height of the stud. When everything is screwed in place, after approximately one week the nylon will creep to the desired stud height and will forever remain in that position without affecting

the accuracy of the vibrations of the barrel, and will not become loose nor affect the mounting of the sights.

For a proper gun design the sights must be mounted directly to the barrel for extreme accuracy. Not to be discursive, but an explanation of the Nylon 66 sight is in order at this point. Here we mounted the front sight on the barrel and the rear sight on the receiver cover. But the rear sight is mounted directly over the rear of the barrel, which is floating in nylon. Therefore, any shifting in the barrel is about the pivot point where the rear sight is located. Therefore, accurate sighting of this model can be obtained, but generally speaking, the sights should be mounted directly to the barrel.

On close examination you will note the receiver is approximately 1" .100 shorter than the Model 722. In a sense it is basically the same receiver, but there are quite a few changes which I would like to point out. The locking lugs are the same but the top supporting area of the bolt back of the breech ring provides more bearing for the bolt, which allows easier functioning without binding. All the bottom section of the receiver is solid, similar to the Model 40X, but the lockup is forward like the Model 721. Whether or not other people agree, testing facts show that the basic M/721 action is the strongest in the world. This is largely due to the support of the cartridge case in the shrouded head. However, the two lugs that have been designed for this model certainly are a contributing factor. This pistol receiver is actually stronger in this respect (although not necessary) than the M/700 because the lower lug in the receiver is fully supported. What a beautiful action for a bench rest rifle --- I can see your mouth watering now.

Moving further back, the rear breech ring has been reduced in depth and the bolt handle has been moved in a reverse Enfield shape and snugs closely to the stock so that no obstruction will prevent easy access or withdrawal for a holster. The rear section of the receiver and the bolt lug have been given a modernistic touch ala Corvette.

A fairly good adjustment has been provided as far as windage and elevation are concerned, for those folks who can shoot pistols offhand do not necessarily have to rely on the use of a well mounted scope and bench support. However, I can assure you that we have seen some very fine groups fired offhand with open sights. There was an individual here last week who teaches police pistol shooting, and I understand he is the state pistol champion, and he had no difficulty shooting repeated 10's at 50 yds. offhand. I have become rusty over the years as far as pistol shooting is concerned and so far have had to be content with a few 98's offhand. So much for open sights.

In my opinion mounts for scopes should bridge over the breech rings and I have been working directly with Al Akin of the Dave Bushnell Company on this problem. The mount supplied you as you will note on more careful observation has a larger radius on the under side than the receiver and therefore will be one point blind contact. The radius should be smaller than that of the receiver to provide two point contact and prevent shifting of the mount. You will find that a shifting of the mount will add about 30% to the group size. Our testing here was with a two point bedding mount that bridged both breech rings, and we have had exceptional accuracy results with several models. As a matter of fact, I just received a letter from Les Bowman who has had the same problems and he, too, is getting exceptional accuracy.

Enclosed are two targets fired by one of the designers of this pistol at 50 yds. showing some very tight groups, which are representative of what you will be getting in a lot of these pistols. Actually, Les Bowman claims to have achieved 1/2" groups at 50 yds. Just received word from Jack O'Connor that he is having difficulty with accuracy and feel certain that his problems are with the mount. I have advised Al Akin of our findings and made recommendations to him. Believe he is going to change his design to a full bridge two point bedding mount.

Moving further down under the stock, I have always felt that a trigger should be recessed into the trigger guard to prevent filling of the gap between the bottom of the trigger and the guard, and also to eliminate the problem of jamming of the seam on a glove between these two elements if the shooter should be wearing gloves. This would be desirable with rifles also, so is a new approach for convenience to the shooter.

It is difficult to design a stock, be it for a shotgun, rifle or pistol, that will fit everyone, and perhaps the pistol is most difficult. We made up numerous clay models to get various hand shapes. The one on this stock was a compromise which we hope will fit most of the people. It is designed with a flare at the top so that the pistol can be supported on the top forefinger and thumb. This type of fit, which is loose and well balanced and high up to the center of gravity of the gun, is the one we believe most normally used by good pistol shooters. The grip was designed so that it will fit either a left or right hand shooter.

Nylon was, of course, the answer to the stock, but our first models were made of wood. Nylon provides perfect bedding at the muzzle and breech and is especially rugged, even at temperatures down to 20 below zero. Later on you will see why the bolt handle and the receiver have been designed as they are.

I trust that you have been provided with sufficient ammunition, cases, etc. for your tests, but if these have not been adequate, or if you need a spare stock or

other items for experimentation, please advise.

Thank you again, Warren, for sending me an advance copy of your fine article and I would like to comment that our Design Section involves a team effort where several experts are doing the thinking, and the pistol is the result of this combination. For example, Charles Morse did an excellent job in designing the original 222 case with a powder load that works efficiently in this short barrel. He also determined (with coordination from Bridgeport) the proper twist. The original twist was one turn in 14"; however, later on we compromised and changed the twist to one turn in 12". The 12" twist is most efficient with 55 grain bullet, but will accommodate a 60 or 50 grain. However, the 35 grain in this twist is not very accurate.

Howard Chambers, one of my important designers on this pistol, is progressing nicely and should be one of our top flight designers. You will note his name on the target. A few montns ago he had never fired a pistol; now he is quite an expert. Credit also should be due to Bob Kelly and Paul Eccleston who did a marvelous job in molding dies for the molded rib and stock. These were not easy items to develop, and of course the dies are quite fussy.

It was nice to hear from you, and I hope some of this information may be of value in the future. Thanks again.

Sincerely yours,

W. E. Leek,
Chief Designer - Firearms
Ilion Research Division

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