

cc: G. M. Calhoun
J. W. Phipps

May 21, 1963

Mr. Pierre F. Hartshorne
249 El Conejo
Los Alamos, New Mexico

Dear Mr. Hartshorne:

We were exceedingly pleased to get your interesting letter pertaining to the new XP-100 Pistol. Your questions show considerable thought and are most natural, and we expected them from several of our friends and shooting enthusiasts.

The first question you were concerned with was the use of the .221 cartridge instead of the .222. Actually the first model that was made up was chambered for the .222. The results of shooting tests revealed exactly what we had anticipated; low velocity and lots of noise. The original .222 was designed so that the powder would be efficiently burned in a barrel approximately 24" in length. Therefore, one would expect that inefficiency and noise would develop in utilizing this cartridge in a short barrel. As a result an entirely new cartridge with different burning characteristics was necessary to be developed for the new pistol.

This involved a considerable amount of investigation in internal ballistics and numerous powders and volumes were used before the most efficient one was determined. The results of course speak for themselves. With the 50 grain bullet the .221 cartridge has a velocity at the muzzle of approx. 2650 fps, and with hand loads and lighter weight bullets over 3000 fps have been obtained. If you purchased one of these pistols and had it rechambered to a .222 length which can easily be done, I am sure you will be very disappointed. The velocity would drop to around 2000 fps, and it would be considerably noisier than you would be willing to accept.

As far as sight range is concerned, there are a great number of shooters who do better in sighting with a short sight range; others who are more stable in their require a longer sight range. We of course compromised in putting the sight in its present position; however, if you will observe the tapping of the receiver for scope mounts and also for receiver sights, this gun can be readily adapted to whatever sights the sight manufacturers may create. We are actually not in the sight business except to provide basic sights for all of our guns. But in the specialty department we leave these items up to other manufacturers.

Mr. Pierre F. Hartshorne

-2-

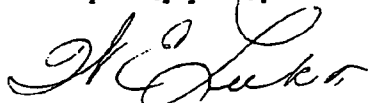
May 21, 1963

The studs which project from the barrel to support the rib are welded onto the barrel with such rapidity that they do not effect the internal dimensions of the bore. They are very rugged and support the sights directly on the studs and not through the rib itself. This is essential to fine accuracy.

The rib is designed in such a manner as to float, and neither expansion nor contraction of the rib effects the point of impact of the barrel.

The nylon "Zytel" material used in the stock is the best that we can obtain and have found it to be ideally suited for this model. I am attaching to this letter a parts list for the Models 722, 700 ADL and BDL, as you requested. We appreciate your fine comments pertaining to our products and after you have had the opportunity to shoot one of these XP-100 Pistols, would certainly welcome hearing from you again.

Very truly yours,



W. E. Leek

Manager - Firearms Design & Development
Illion Research Division

WEL:T
Encl.

Greg Hartshorne letter returned to Phipps

R2503425