

Colt Industries



Firearms Division
150 Huyslope Avenue
Hartford, Connecticut 06102
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September 23, 1977

Dear Mr. Phillips:

In response to your inquiry regarding the correct calibers for Paterson Colt handguns and the difference in calibration between cylinder chamber diameter and barrel bore diameter of these arms, we conclude the following:

The correct caliber for the Paterson revolvers must be based on the careful measurements taken from specimen revolvers, including chamber, bore and groove diameters, bullet mold cavities, actual bullet and ball diameters and correlated with research done by Larry Wilson in the Colt Archives at the Connecticut Historical Society and the Connecticut State Library. Bearing in mind that machinery in the period of the 1830's and early 1840's was not all that precise, it is therefore not surprising to find variations of a few thousandths of an inch from one gun (of the same model) to another:

	<u>Cylinder Chamber Diameter</u>	<u>Bullet Mold Diameter</u>	<u>Bore Diameter</u>
Pocket and Fourth Model Ehlers:	.280"	.280"	.290 - .295"
Belt and Fifth Model Ehlers:	.320 - .325"	.325"	.350 - .360"
Holster or Texas Model:	.370 - .373"	.375 - .378"	.390 - .410"

Although research has yet to locate advertising or other documents of the Paterson period, which state handgun calibers specifically, the calibrations show a definite closeness to those made at the Colt Hartford factory for

percussion revolvers (commenced manufacture in 1847). Colt called the Hartford figures .265 (introduced 1855*), .31 and .36 - despite the fact all of these calibrated more like .280", .320", and .375". To be precise, the Paterson revolver calibers should be .28, .32 and .38, but in keeping with Colt's Hartford arms identification and accepted practice by today's collectors, these calibers are best called:

Pocket and Fourth Model Ehlers:	.28
Belt and Fifth Model Ehlers:	.31
Holster or Texas Model:	.36

In returning the Model 1851 Navy and Third Model Dragoon revolvers to production (in 1971 and 1975 respectively), we conducted extensive shooting tests (with both round ball and conical bullets) employing stop motion photography, muzzle velocity and pressure measurements and a variety of other aids. Tests on the 1851 Navy are particularly relevant to your Paterson studies, since that revolver's caliber is the same as on the Texas or Holster Model Paterson.

In answer to your question regarding the reason why the barrel bore diameter measures larger than the diameter of the cylinder chamber:

Black powder leaves a notable amount of residue in the barrel on firing. It is likely that a significant reason for the barrel bore diameter being larger than the chamber was to allow for the buildup of fouling. Tests indicate that to some extent the bore is "self-cleaned", after some number of rounds have been fired, by virtue of the bullet or ball passing through the bore along with the burning powder, gasses, etc. Note that such would be particularly important with the Paterson handguns, due to their deep rifling grooves, and their greater number (eleven grooves as opposed to the Navy's seven).

Another factor to consider: Likely the theory in the percussion revolver era was that the round ball, being of soft lead, would expand, on firing, to fill in the rifling grooves. However, as our tests established with actual firing of the Navy and Dragoon, such is not the case. Specimen round balls showed little sign of having been shot through rifled barrels.

Also note that the barrel bore diameter of the 1851 Navy, Dragoon and 1860 Army had barrel bore diameters larger than the cylinder chambers. This is also true of several other models of percussion Colt revolvers examined.

* Collectors often term this the .28 caliber.

As a matter of interest, our tests confirm that the round ball was a more accurate projectile in the subject Colt percussion handguns than was the conical bullet.

If we can be of any further help, please let us know.

Sincerely,



R. E. Domian
Sr. Product Designer