

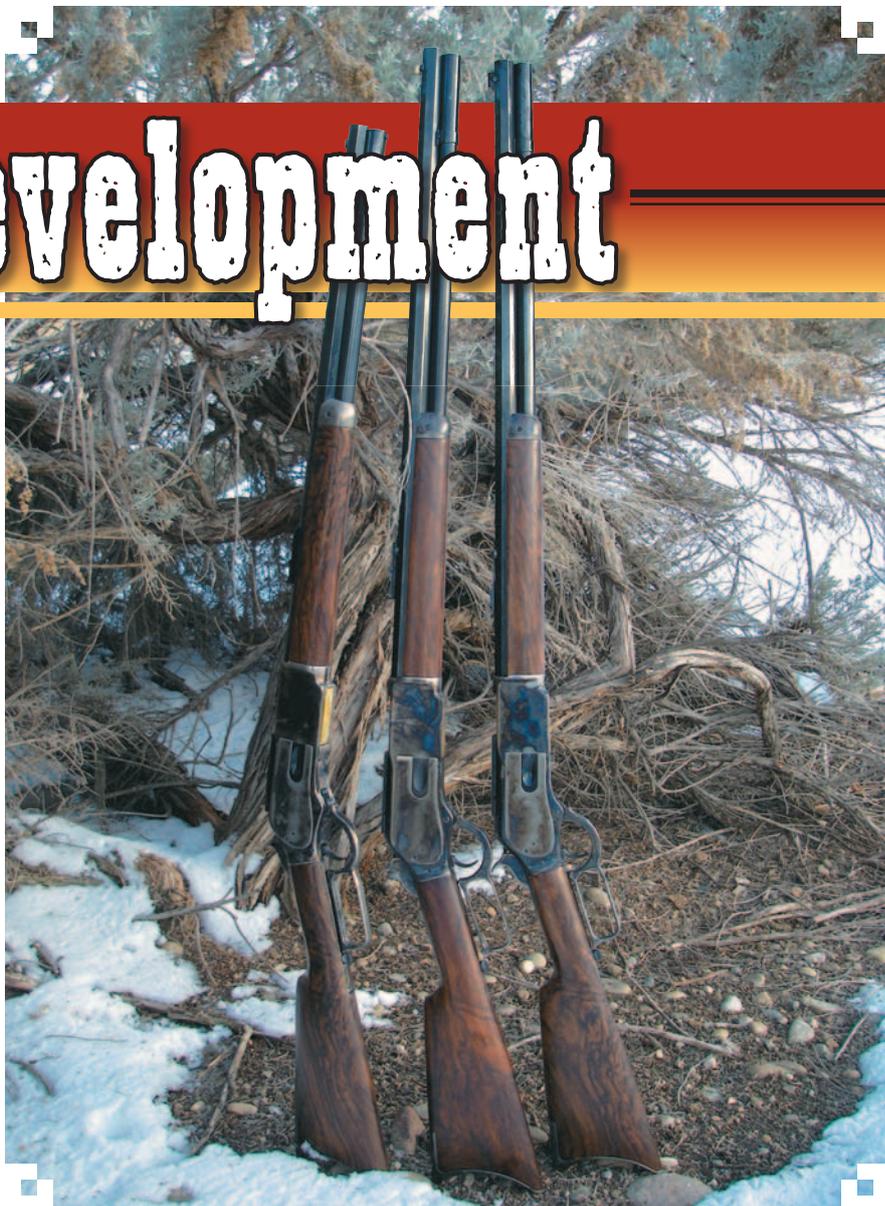
# Load Development

## Brian Pearce

In the last issue of LoadData.com, we offered loads for the .40-60 WCF chambered in a reproduction Model 1876 rifle. Now let's take a closer look at the .45-60 WCF.

The .45-60 WCF was first offered in 1879 and chambered in the Winchester Model 1876 rifle, which was essentially a larger version of the Model 1873. In spite of its size, the action of the Winchester rifle was not long enough to accommodate the .45-70 Government cartridge. The .45-60 was created by shortening the .45-70 case from 2.10 to 1.89 inches. Bullet weight was listed at 300 grains, and when shot with around 60 grains of black powder, muzzle velocity was advertised at 1,315 fps.

In the past couple of years, Uberti (imported by Cimarron Firearms and Taylor's and Company) and Chaparral-Repeating Arms (imported by Charter 2000) have been offering replicas of the Winchester Model 1876 and are available in the four original calibers, including .40-60, .45-60, .45-75 and .50-95 WCFs. These guns are crafted of modern steels and are suitable for loads containing smokeless powders. It is not recommended to use accompanying smokeless data (with the exception of IMR Trail Boss and



Brian used three Charter 2000 Model 1876 rifles chambered in .45-60 WCF, .45-75 WCF and .40-60 WCF to develop load data.

Hodgdon Triple Seven powders) in original Winchester Model 1876 rifles.

As of this writing, TEN-X Ammunition is the only company offering factory loads for the .45-60 WCF. A sampling of the smokeless loads was tried in the 22-inch barrel of the Chaparral-Repeating Arms rifle, which clocked 1,367 fps.

There are no SAAMI specifications for the .45-60 WCF cartridge, but like many black-powder cartridges from this era, 28,000 CUP is considered maximum. While no pressure barrel was available, it is believed that no loads exceeded 21,000 CUP, which is way below

the destruction limits of the imported Model 1876 rifles.

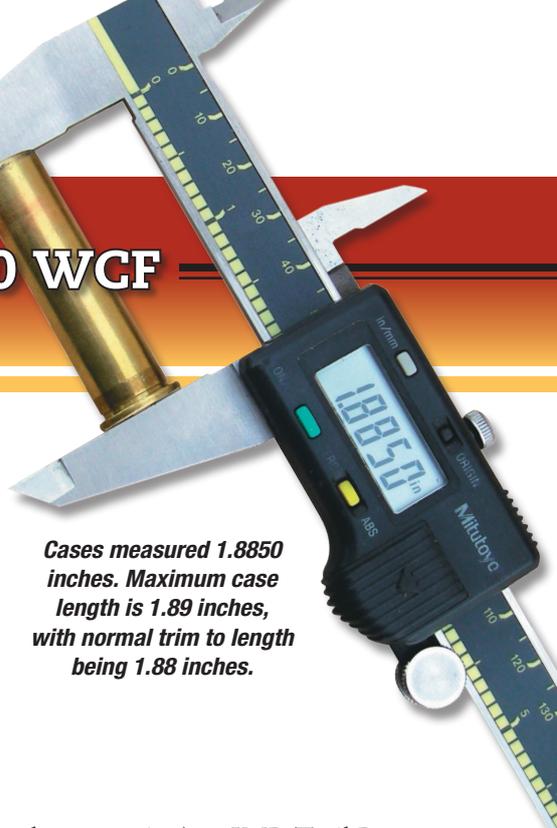
Handloading the .45-60 WCF was relatively easy, but there are a couple



Lyman mould 457191, weighing 292-grains, is a traditional plain base cast bullet for the .45-60 WCF.



## Handloading the .45-60 WCF



**Cases measured 1.8850 inches. Maximum case length is 1.89 inches, with normal trim to length being 1.88 inches.**



**Brian tried sizing cast bullets to .458 and .459 inch. There was no perceptible difference in accuracy with the factory open sights.**

of items to be aware of before sitting down at the bench. For instance Lyman mould 457191, a 292-grain cast bullet, is a natural choice for this cartridge, but to allow proper function through the Model 1876 action, the overall cartridge length must be limited to around 2.250 inches. With a case length between 1.88 and 1.89 inches the bullet must be seated so the case is crimped over the front driving band and on the ogive (and is how it was originally designed). When using a case full of black powder, the powder supports the base of the bullet, effectively preventing it from being pushed deeply into the case when subjected to tubular magazine pressure and recoil.

On the other hand, most smokeless powders leave space in the case and do not support the base of the bullet. As a result, bullets were observed being pushed deeply into the case, which can cause function issues, but worse, can cause pressures to spike.

The groove diameter of the .45-60 WCF measured .457 inch, and in an effort to tighten the bullet to case fit and keep them in place, they were sized .458 and .459 inch; however, this still did not provide enough hold to satisfy this gun writer.

One option to cure the above problem includes using Hodgdon Triple Seven FFG (an excellent black-powder substitute with

less corrosion) or IMR Trail Boss (a modern bulky smokeless powder designed for this application). Both powders can be loaded to 100 percent case capacity to support the base of the bullet.

When loading smokeless powders that are less than 100 percent capacity, another option includes trimming cases to 1.81 inches, then seating the Lyman 457191 bullet to the upper lube groove and using it as a crimping groove. In this fashion the overall cartridge length remains effectively the same at 2.250 inches, which allows cartridges to function reliably and the bullets to positively stay in place. (This particular bullet features three lubrication grooves, and with the upper one being used as a crimp groove, the two remaining grooves hold enough Alox lubricant to prevent barrel leading.)

Another cast bullet that gave good results is Lyman mould 457122, which is a 330-grain hollowpoint. This bullet is rather long for the .45-60 case, and some die sets might not properly size the case to assure that the base of the bullet is sealed against the case wall. (Keep in mind that this case does have some slight taper and is not “straight.”) If it does not properly seal, lubrication can leak into the powder contaminating



**As of this writing, only TEN-X Ammunition is offering factory loads in .45-60 WCF.**

**.45-60 Winchester Handloads**  
 (For Use in Modern 1876 Reproductions ONLY)  
**DO NOT USE IN ORIGINAL WINCHESTER MODEL 1876 RIFLES**

| bullet<br>(grains)             | powder                         | charge<br>(grains)     | velocity<br>(fps) | comments      |                  |  |
|--------------------------------|--------------------------------|------------------------|-------------------|---------------|------------------|--|
| 300-grain TEN-X factory load   |                                |                        | 1,367             |               |                  |  |
| 292-grain cast Lyman 457191    | IMR-4198                       | 23.0                   | 1,042             |               |                  |  |
|                                |                                | 26.0                   | 1,199             |               |                  |  |
|                                |                                | 29.0                   | 1,366             |               |                  |  |
|                                | AA-5744                        | 21.0                   | 1,085             |               |                  |  |
|                                |                                | 23.0                   | 1,181             |               |                  |  |
|                                |                                | 25.0                   | 1,280             |               |                  |  |
|                                | AA-2015                        | 27.0                   | 1,387             |               |                  |  |
|                                |                                | 32.0                   | 875               |               |                  |  |
|                                |                                | 34.0                   | 1,005             |               |                  |  |
|                                |                                | 36.0                   | 1,151             |               |                  |  |
|                                |                                | 37.5                   | 1,248             |               |                  |  |
|                                | 330-grain cast HP Lyman 457122 | Pyrodex Pistol Pellets | 60.0*             | 1,553         |                  |  |
|                                |                                |                        | Trail Boss        | 10.5          | 1,069            |  |
|                                |                                | Varget                 | 14.8              | 1,256         |                  |  |
|                                |                                |                        | 31.0              | 883           | do not reduce    |  |
| 33.0                           |                                |                        | 961               |               |                  |  |
| 35.0                           |                                |                        | 1,043             |               |                  |  |
| 36.5                           |                                |                        | 1,089             |               |                  |  |
| H-4895                         |                                | 38.0                   | 1,154             |               |                  |  |
|                                |                                | 30.0                   | 848               | do not reduce |                  |  |
|                                |                                | 32.0                   | 931               |               |                  |  |
|                                |                                | 34.0                   | 1,044             |               |                  |  |
|                                |                                | 36.0                   | 1,160             |               |                  |  |
| 330-grain cast HP Lyman 457122 |                                | Triple Seven FFg       | 38.0              | 1,272         |                  |  |
|                                |                                |                        | 32.0              | 1,164         | charge by weight |  |
|                                |                                | AA-5744                | 20.0              | 1,044         |                  |  |
|                                | 22.0                           |                        | 1,119             |               |                  |  |
|                                | 24.0                           |                        | 1,205             |               |                  |  |
|                                | 26.0                           |                        | 1,284             |               |                  |  |
|                                | 32.0                           |                        | 1,074             |               |                  |  |
|                                | AA-2015                        | 34.0                   | 1,141             |               |                  |  |
|                                |                                | 35.5                   | 1,192             |               |                  |  |
|                                |                                | 37.0                   | 1,252             |               |                  |  |
|                                |                                | Varget                 | 28.0              | 819           |                  |  |
|                                |                                |                        | 30.0              | 924           |                  |  |
|                                | 32.0                           |                        | 1,031             |               |                  |  |
|                                | 34.0                           |                        | 1,144             |               |                  |  |
|                                | 36.0                           |                        | 1,248             |               |                  |  |
| 330-grain cast HP Lyman 457122 | Trail Boss                     | 10.0                   | 992               |               |                  |  |
|                                |                                | 12.0                   | 1,065             |               |                  |  |
|                                |                                | 13.0                   | 1,098             |               |                  |  |
|                                | H-4895                         | 14.0                   | 1,143             |               |                  |  |
|                                |                                | 27.0                   | 881               | do not reduce |                  |  |
|                                |                                | 29.0                   | 985               |               |                  |  |
|                                |                                | 31.0                   | 1,086             |               |                  |  |
|                                | 330-grain cast HP Lyman 457122 | Triple Seven FFg       | 33.0              | 1,177         |                  |  |
|                                |                                |                        | 35.0              | 1,267         |                  |  |
|                                |                                |                        | 32.0              | 1,167         | powder by weight |  |
| 300 Sierra JHP                 |                                |                        | AA-5744           | 24.0          | 1,206            |  |
|                                |                                |                        |                   | 25.0          | 1,236            |  |
|                                | 26.0                           | 1,278                  |                   |               |                  |  |
|                                | 27.0                           | 1,310                  |                   |               |                  |  |
|                                | 27.0                           | 1,310                  |                   |               |                  |  |
|                                | IMR-4198                       | 25.0                   | 1,075             |               |                  |  |
|                                |                                | 26.0                   | 1,124             |               |                  |  |
|                                |                                | 27.0                   | 1,175             |               |                  |  |
|                                |                                | 28.0                   | 1,219             |               |                  |  |
|                                |                                | 29.0                   | 1,276             |               |                  |  |

**Notes:** A Chaparral Repeating Arms Model 1876 with a 22-inch barrel was used to fire all loads. Cases were Starline .45-70 trimmed down. Maximum case length: 1.89 inches; trim-to length: 1.88 inches. Overall cartridge length: factory loads, 2.17 inches; handloads, 2.250 inches. Bullet diameter: cast bullets sized to .458 inch. CCI BR-2 Large Rifle primers used throughout. Temperature during testing was 18 degrees Fahrenheit.

\* Two Pyrodex 30-grain Pistol Pellets

*Be Alert – Publisher cannot accept responsibility for errors in published load data.*

# Load Development

it. The Lyman dies that were used sized cases correctly to allow the use of this bullet. Like the former bullet, cases should be trimmed to 1.81 inches, with the crimp placed in the upper lubrication groove for an overall cartridge length of 2.250 inches.

Most loads performed well, as they were accurate and produced low extreme spreads, but IMR-4198 gave especially good results with each of the bullets used. For instance 29.0 grains drove the 292-grain cast bullet 1,366 fps, gave low extreme spreads and was accurate. The same powder charge propelled the 300-grain Sierra bullet 1,276 fps while achieving similar accuracy. Another good powder was Accurate Arms 5744, with 26.0 grains shooting the 330-grain Lyman hollowpoint bullet 1,284 fps, producing similar groups as the above loads.

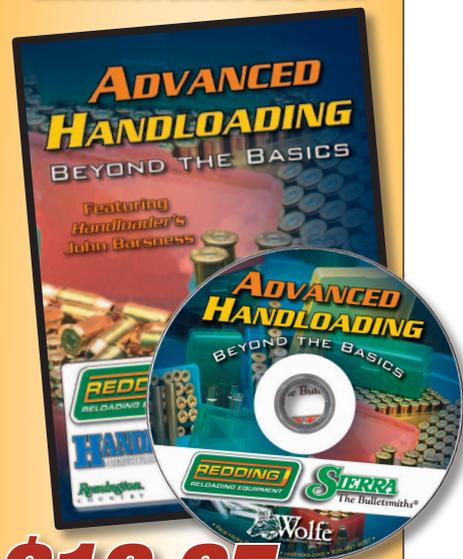
The .45-60 WCF is a practical choice for handloaders, as cases are easily created by trimming .45-70 brass, or commercial versions are readily available through TEN-X



**With a 292-grain cast bullet driven to 1,366 fps, the Charter 2000 Model 1876 chambered in .45-60 WCF proved accurate with open sights.**

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**A variety of powders were used to develop .45-60 WCF handloads.**