

Analysis of .380 ACP Remington Golden Saber 102gr JHP, factory bullet vs. HyperCav

I fired one shot of factory ammunition and two shots of HyperCav 3-hole modified bullets. Each shot was fired into a stack of 1-gallon drinking water jugs, and the bullets were recovered.

The factory bullet expanded uniformly and widely, but only penetrated through two water jugs and barely entered the third. The entrance hole to the third jug was more of a dent/crack than a typical bullet hole observed in most other shots. The jacket was hung on the crack, having only barely entered the third jug (for a total of 13 inches of water penetration, equivalent to 6.5 to 8.1 inches of ballistic gelatin penetration). The jacket was still attached to the core with no sign of separation.

Both HyperCav bullets expanded, one was less symmetric. Both HyperCav bullets penetrated three full jugs and put a dent and cut into the fourth jug. The first HyperCav bullet core slightly separated from the jacket, but remained barely together. The second HyperCav bullet core completely separated from the jacket. This is notable in that core/jacket separation usually decreases penetration significantly – which is why the bonded bullet was introduced (Gold Dot, Golden Saber Bonded, Federal Tactical, Winchester Ranger Bonded, etc.).

The lead cores of the HyperCav bullets did not expand as deeply into the cavity as the factory bullet, but the lead “petals” were cracked. This indicates that while the expansion was not as far, it was more violent – the strain rate was so much higher that it actually fractured the lead instead of deforming it.

The jackets of the HyperCav bullets expanded farther back than the factory jacket, despite the lead petals not expanding as far. What I believe happened is the more violent impact peeled the jacket petals off faster, causing the jacket to expand without the lead core petals having to push the jacket petals out.

There had been some speculation that HyperCav worked by weakening the cavity walls. However, the HyperCav bullets did not expand down far enough to intersect the drilled vents. In fact, the drilled vents were mostly intact, if a tiny bit squashed. This can be plainly seen in the photographs. This demonstrates that the HyperCav does not work by weakening the cavity wall, because the wall was not deformed in any way that would have been changed by the holes or lack thereof.

.380 Rem. 102gr Golden Saber, Kel-Tec P3AT Shot into 1 gal water jugs

**Factory bullet: expanded diameter .675"
penetration: 13" water**



**HyperCav #1: expanded diameter .664"
penetration: 18" water**



**HyperCav #2: expanded diameter .672"
penetration: 18" water**

