

The Los Angeles Silhouette Club

Cast Hollow-points and the Contender

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At the turn of the last century, there were a total of 3 hollow-pointed bullets available for use in handguns, the Ideal 31133 (a 115 grain HP for the .32-20), the Ideal 40090 (a 168 grain HP for the .38-40) and the Ideal 42499 (a 195 grain HP for the .44-40). These bullets were marketed as "express bullets" for the lever-action repeating rifles of the day and the claim was made that they "increased the killing qualities of these rifles by 50%". These bullets were obviously made with black powder in mind as they were designed without a crimp groove, relying instead on a compressed case full of black powder to prevent the bullet from being jammed into the case under recoil as they waited in line in the tubular magazine. Since the revolvers of the 1890s were also chambered for these cartridges, these cast hollow-points could also be fired in handguns (in revolvers, a crimp groove wasn't necessary as a simple crimp over the ogive prevented the bullet from inching forward under recoil and tying up the cylinder). The advantages of expanding bullets in handguns are obvious to us today, so why didn't 19th century sixgunners flock to these HP designs like hungry dogs to fresh meat? Simple, at that point the handgun was viewed basically as a last ditch defensive tool, and at black powder velocities the standard bullet designs served adequately.

As handgun quality improved, a number of new bullet designs were brought forth in an effort to improve handgun performance. This was a truly fascinating time in terms of cast bullet design! Developments like the Himmelwright wadcutter (Ideal 429220, 1900), the beveled crimping groove for revolver bullets (first embodied in the 98 grain RN for the .32 S&W Long, the Ideal 313226, 1900), the gas-check (the first GC bullet suitable for use in a handgun would be the Ideal 311316, the 115 grain GC-FP for the .32-20, 1906), and Ed McGivern's hollow-based wadcutter (Ideal 358395, 1915) all were introduced between 1900 and the beginning of World War I. Ideal brought out literally hundreds of new bullet designs during the first quarter of the 20th century. However, inspection of Ideal Handbooks #9 (1897) and #25 (1915) through #30 (1931) reveals that not one new hollow-point design suitable for handguns was added to the catalog; the selection was still limited to the three designs listed in 1897. Elmer Keith was to change this around 1932 with the introduction of the Ideal 358439, a 160 grain hollow-point version of the Keith SWC (Ideal 358429) for the .38/44 Heavy Duty. In the mid-1930s, he followed this with hollow-point versions of his landmark semi-wadcutters, the Ideal 429421 and 454424. These three bullets were the first cast hollow-point bullets created specifically for handguns. Later, in the mid-1950s, Ray Thompson put his touch on this concept by drawing up a similar series of cast HP's adorned with gas-checks (Lyman-Ideal 358156 HP, 429215 HP, 429244 HP and 452490 HP). The Keith and Thompson hollow-points are among the best revolver hunting bullets ever designed -- the 358439, 358156 HP, and 429215 HP for vermin, and the 429421 HP, 454424 HP, 429244 HP and 452490 HP for medium game.

Handgun hunting began to grow in popularity in the 1950s, especially with the introduction of the .44 Magnum, but it took a while for the factories to figure out how to mate dissimilar metals to make a JHP that would reliably deliver the superb performance of the Keith and Thompson HP's. In the early 1960s, a surge in popularity of handgun hunting led to several new developments like the Ruger Hawkeye and the Remington XP-100, as well as several new hunting oriented cartridges, like the .22 Jet, .221 Fireball, the .256 Winchester and .41 Mangum. Rock-n-roll (or at least muzzle blast) was here to stay.

In 1966 the Thompson-Center Contender was introduced, chambered in such mild-mannered cartridges as the .22 Long Rifle and the .38 Special. Later, experimentation revealed that this versatile break-action single-shot was capable of handling considerably more powerful cartridges, and the race was on to see who could squeeze the most power out of the Contender platform with both factory and wildcat cartridges. Some of these experiments went too far, resulting in stretched frames and/or torn under-lugs. As a result, a pretty solid understanding took shape as to what the Contender would (and would not) handle and still provide a long, healthy service life. A series of Contender-based wildcat cartridges (most notably the JDJ's and the TCU's) were developed that provided excellent performance in the hunting fields. However, to achieve this success, it was necessary to pair these cartridges with jacketed bullets that were soft enough to expand reliably at the reduced velocities of these wildcats from Contender length barrels (typically 2000-2400 fps). In some calibers (e.g. 6.5 mm) this was readily done, in others (e.g. 7 mm) it was more problematic due to the prevalence of hard bullets, designed for belted magnum velocities. In general, the mindset surrounding much of the wildcat development for the Contender seems to have been "What can we do to squeeze the most possible velocity out of the gun so we can make jacketed rifle bullets expand?". I'm not criticizing this mindset (my high-performance SSK T/C barrels are among the most reliable and cherished hunting tools that I own), but this is not the only way to get reliable bullet expansion from the Contender. Certainly, there have been exceptions to this wildcatting strategy (e.g. the .338 Woodswalker), but these efforts took specific jacketed bullets that were known performers at moderate velocity (in this case the 200 grain Hornady FP) and then delivered them at that velocity. It is simply a question of balancing bullet construction with impact velocity. An alternative strategy -- instead of trying to force the cartridge/gun combination to live up to the velocities needed to drive jacketed bullet expansion, we can attain the same level of bullet expansion by making softer expanding bullets that expand reliably at the moderate velocity levels of the 10" Contender. This article is intended to provide an overview of how reliable expansion can be provided at velocities where jacketed rifle bullets simply do not expand. Like the Keith and Thompson hollow-point that went before them, this level of Contender performance is provided by the cast hollow-point. The beauty of this approach is that because the cast HP will expand reliably at modest velocities, one can resort to a heavier bullet than would be used in jacketed form, resulting in both controlled expansion and deep penetration. An added benefit is the tendency of cast HP's to expand down to the bottom of their cavity and then have the petals shear off, leaving a solid "wadcutter" to penetrate through the off-side, much like the highly respected Nosler Partition.

There are a number of rounds that the Contender has been chambered for over the years that operate in the velocity range where jacketed rifle bullets generally fail to

expand (i.e. 1300-1800 fps). While these rounds garnered a following in competition (e.g. the .30-30 in silhouette, the .270 Ren in NRA silhouette, etc.), poor bullet expansion in the hunting fields led handgun hunters to turn to other cartridges. For the investment of a single hollow-point mould, these "competition only" T/C's can be transformed into excellent hunting weapons. Other T/C chambering's that are already "hunt-worthy" can have their versatility extended considerably through the use of cast hollow-point bullets. In addition, some old cartridges for which expanding ammo is simply not available can be given new life when loaded with a suitable cast hollow point. Let's look at some examples of each.

.270 Ren. .270 Jacketed bullets were designed for muzzle velocities of 3000 fps, and don't expand at all at .270 Ren velocities (1400-1600 fps). As a result, these jacketed spitzers behave pretty much like a FMJ spitzer, and they just don't have the diameter or velocity to carry much "thump" from this little gun. However, an expanding 100+ grain .270 bullet at these velocities makes a dandy varmint round. The Ideal 280412 HP drops from the mould at 135 grains (139 checked and lubed) when cast of WW alloy sweetened with 2% tin. 9.0 grains of H-110 motivates this bullet to 1425 fps from a 10" Contender. Expansion of this load is positive, and accuracy is superb. In my gun, this load shoots well above the iron sights, requiring the use of a scope to get point of aim and point of impact to jive, but groups are one ragged hole at 50 yards. This level of ballistic performance is intermediate between the Ruger Blackhawk .30 Carbine and typical .357 Magnum ballistics (with significantly better sectional density than either), making this combination ideally suited to javelina-sized game, coyote and other fur-bearers, like fox and bobcat, and perhaps even turkey (where handguns are legal for turkey). This cast HP expands in a manner similar to the Nosler Partition (i.e. after the front half expands, the petals break away, leaving the wadcutter back half to punch out the other side), which should result in small exits on the furbearers, and therefore less pelt damage. The cast HP makes a legitimate hunter out of the .270 Ren.



The .270 Ren and the 139 grain Ideal 280412 HP, a fine combination for furbearers.



The .30-30 Winchester loaded with the 157 grain Lyman 311466 HP. Expansion of this bullet at 1800 fps is violent.

.30-30 Winchester. The 10" Contender chambered for the .30-30 Winchester cartridge has always been kind of an "odd duck". When the 10" .30-30 was first introduced, standard weight jacketed bullets (150-170 grain) didn't expand at the velocities obtainable from this little gun (1700-1800 fps), but they were very effective at knocking over steel silhouettes. Lighter weight varmint bullets expanded, but ballistics were not uniform with this combination of a large case and short barrel (this is why Steve Herrett and Bob Milek developed the .30 Herrett). Thus, the 10" .30-30 had a brief run of popularity in silhouette circles, then faded from the limelight as flatter-shooting, lighter recoiling cartridges and longer barrels came into their own. It wasn't until Nosler came out with their line of fragile

Ballistic Tip bullets that the 10" .30-30 T/C really had suitable hunting bullet, but by this time other cartridges had taken center-stage in the handgun hunting press. The Guy Loverin designed Lyman 311466 HP weighs 157 grains after the addition of a gas-check

and lube. Loaded over 32.0 grains of H4895, this bullet leaves a 10" Contender at 1790 fps. 5-shot groups at 50 yards run 2 1/2" (iron sights), and expansion is violent.

These are flat-shooting, hard-hitting and accurate loads, that give the deer-hunter all that he could ask for from a 10" .30-30. The combination of a cast HP with an iron-sighted 10" .30-30 Contender makes for a very portable, very practical hunting tool for deer-sized game. The "odd duck" has grown a leaden fist.

6.5 TCU. The 6.5 TCU was designed by Wes Ugalde specifically for the Contender and silhouette competition. The chambering specifications adopted by T/C gave the 6.5 TCU a very long throat so that heavy bullets could be seated long, to maximize knock-down power on those heavy steel rams, 200 meters away (chamber casts that I've made on several factory barrels have revealed that the factory throat is almost half an inch long and commonly as much as .267" in diameter). This over-sized throat means that short varmint weight bullets (i.e. 85 to 100 grain) have an excessive jump to reach the rifling and typically have accuracy problems, while the 120 and 140 grain bullets (that are long enough to be seated to reach the lands) tend to shoot very well indeed. However, the limited case capacity provided by the blown out .223 case means that the 140 grain jacketed bullets are going too slow to expand. Therefore, as far as the handgun hunter is concerned, the 6.5 TCU is basically a one bullet weight gun. The 120 grain bullets are exceptionally good deer bullets (particularly the 120 Nosler BT and 120 grain Speer), and flatten deer/antelope way out of proportion to the round's pipsqueak appearance, but unfortunately they don't expand worth beans on pint-sized varmints. The 85 and 100 grain varmint bullets expand just fine at 10" TCU velocities, but accuracy is generally so poor that hitting yon varmint can be frustrating (3+ MOA is not unusual for the lightweight bullets). This is where cast HP's come in -- by using an appropriate cast HP, it's possible to have them be long enough to align/engrave properly, and you can cast them large enough to fit the throat snugly and still be soft enough to expand on varmint sized game. The throat on my factory 6.5 TCU barrel runs .267" and I size all cast bullets for it to .266" (bullets sized .264" give poor accuracy). The Ideal 266455 HP weighs 122 grains after the installation of a gas-check and lube. When this fine bullet is loaded on top of 26.0 grains of H4895 a muzzle velocity of 1838 fps is obtained. 5-shot groups at 50 yards run right at one inch and expansion is excellent. Because of the fine performance of the 120 Nosler and Speer jacketed bullets on deer, I tend to think of this cast HP load mostly for vermin (this is a favorite coyote load), but it might also serve nicely for smaller deer and exotics. Again, this cast HP displays expansion behavior similar to the highly regarded Nosler Partitions, which makes it particularly useful as a hunting bullet.



The 6.5 TCU and the 122 grain Ideal 266455 HP -- a fine combination for critters up to about 100-150 pounds.

.357 Hartley. Conceptually, the .357 Hartley can be thought of as more or less a .35/.30-30 "Improved" (the shoulder has been moved forward somewhat in this wildcat). It is an excellent cast bullet round, and is well-served by a wide variety of cast bullet designs (my 10" .357 Hartley is particularly fond of the 250 grain LBT LFN at 1400-1500 fps). Being based on the .30-30 case, this wildcat faces the same challenges as the .30-30

when housed in a 10" Contender -- jacketed bullets that are light enough to expand may deliver less than desirable uniformity due to the combination of large case capacity and short barrel, and those jacketed bullets that are heavy enough to compress the P-T curve and give good accuracy from the short barrel are going too slow to expand (again, this is why Steve Herrett and Bob Milek developed the shorter .357 Herrett). The Lyman 358009 HP weighs 288 grains (checked and lubed) when cast with WW alloy sweetened with 2% tin. When launched with 32.0 grains of H4895 this blunt behemoth achieves 1460 fps and delivers positive expansion, and excellent accuracy (5 shots into an inch and a half at 50 yards with iron sights). This is basically .44 Magnum performance, with a holiday helping of sectional density, and not only expands well, but should also penetrate nicely (I haven't shot anything with this one yet). In short, it promises to be excellent 100 yard thumper for deer, black bear, elk sized critters in heavy timber.



The .357 Hartley loaded with the 288 grain Lyman 358009 HP. This load delivers 1460 fps from a 10" Contender; expansion is positive.

Old-Timers:

Shooters have a tendency to be historically minded. One manifestation of this is the practice of exploiting the easy "wildcat-ability" of the Contender to rejuvenate old low-pressure black-powder cartridges from the 1870s and 1880s (e.g. 40-82 Winchester, .50-70 Government). While the full-length Sharps cartridges would make an odd bed-fellow for a 10" Contender, the somewhat smaller .40-50 Sharps Straight is right at home in this portable platform.



The .40-50 Sharps Straight loaded with a 214 grain Winchester HP. An old-fashioned deer cartridge, loaded with style!

.40-50 Sharps Straight. The purpose of this exercise was not to see how much velocity could be squeezed out of some poor, helpless, 120 year-old geezer of a cartridge, but rather to rejuvenate the old Sharps round and reproduce its black-powder ballistics (265 grain lead bullet at 1360 fps) from a 10" Contender. This is easily done, and at moderate pressures. A variety of .40 caliber cast bullets weighing between 200 and 330 grains have been tested and shoot just fine in this little gun, and while they make legitimate hunting loads in their own right, I was also looking for an expanding bullet for deer-sized game. A vintage Winchester HP mould for the .40-65 was obtained to scratch this particular itch. This mould had been modified by milling off the top of the mould blocks to remove the base band on the bullet; it

drops a plain-based bullet weighing 214 grains when cast of 20-to-1 alloy. When loaded with 35.0 grains of 3031 this bullet leaves the 10" .40-50 Sharps Straight Contender at a little over 1400 fps. Accuracy is good and expansion is positive. This is a very fun gun to hunt deer with (you should see some of the looks I get from other hunters when they ask me what I'm hunting with!). For those of you thinking that this is basically a .41 Magnum with 1880s panache, you get a gold star.

Lyman doesn't make very many HP moulds anymore (only the Gould .45-70 bullet, #457122, and the Devastator handgun line of HPs are cataloged at this point). However,

Lyman/Ideal HP moulds show up on the used market regularly and can be found at gun-shows and online. In order to cast high quality HPs, turn up the pot temperature and cast fast. Keep that HP pin hot! In general, you should keep the antimony content of your alloy below 4% (to minimize brittleness) and make sure to include at least 2% tin (for improved "castability"). It's an easy matter to vary the hardness of your alloy to tailor the expansion of your cast HP's to your exact wants and needs (20-to-1 for the soft stuff at lower velocities, and "sweetened" WW alloy for the harder bullets at higher velocities are good places to start).

For best accuracy, size the cast HP to be a snug fit in the throat of your barrel (and remember that T/C throats tend to be somewhat oversized). As a result, a little thumb-pressure may be needed to chamber these rounds. Also, for those who aren't used to loading cast bullets in bottlenecked cases, make sure you flare the cases (just as you would typical handgun loads) to avoid damaging the bullet's base during seating. The bullet should slide into the case as though greased (it is after all). If you feel unusual resistance, or the stepwise stop-n-go entrance of the driving bands, then you're probably damaging the bullet during the seating operation and need to open up the case mouth a little more. I made a universal flaring die (from a surplus 9mm expansion die) for this operation for all my cast bullet shooting, and it works quite nicely. A gentle flare is all that's needed.

It's not necessary to red-line the loads to get reliable bullet expansion out of the Contender. It's simply a question of balancing the bullet construction to the velocity. The cast hollow-point bullet allows the Contender shooter to get reliable bullet expansion in a velocity range where jacketed rifle bullets typically fail to expand, thereby allowing the handgun hunter to enjoy the hunt with guns that might otherwise get left at home.



Home-modified universal flaring die

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