

.357 Bain & Davis

By Lee Martin
(Arlington, Virginia)

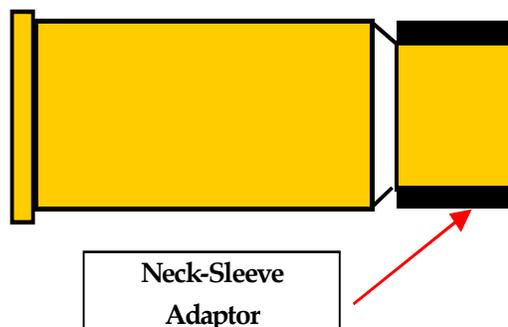
My first .357 Magnum was a Dan Wesson Model 15 that I got for Christmas at age 11. To a kid it seemed like a hell of a lot of power. It was loud, produced a significant amount of muzzle flash, and back then seemed to possess hard recoil. I still frequently shoot my .357's and use a Model 66 2.5" for personal carry. Truthfully, the only time the round disappoints is when I put one over a chronograph; it just doesn't live up to the proverbial "Deathray" image (at least not in the small to mid-sized frame revolvers). Then you move up to the platforms that can really handle high-pressure .357's. Unquestionably, when reloaded for N-Frame Smith's, Ruger Blackhawks, or Freedom Arms 353s the round shines. Remember, people frowned upon the fact that the .357 couldn't hit 1,500 fps with a 158 out of a standard sized gun. As it turns out, when tailored for the heavier frames a 180 grain can approach this level of performance (though the pressure curve nears 50,000 cup).

The .357 Maximum in the stretched-frame Blackhawk was an excellent idea. You could shoot 180 grain bullets at 1,450 – 1,550 fps and maintain reasonable levels of pressure. As we all know, the flame cutting concern turned out to be a non-issue and the gun has been widely used for custom conversion purposes. I have a Ruger .357 Max in 10.5" configuration and it's a beautiful piece of single-action. For silhouette work it's ideal....for everything else it's somewhat large. Secondly, the Ruger cylinder when chambered for .357 has a lot of unused steel. If high-pressures in a small case can provide the above noted velocities, what would additional powder capacity give at similar thresholds? Well, Dan Cotterman and Keith Davis definitely had the right idea with respect to wildcatting the .357. Their primary endpoint was to easily exceed the performance returned by the venerable .357 Magnum. Secondary endpoints included using a proven parent case and ensuring that it was functional in double and single action revolvers. The result of their efforts is the .357 Bain & Davis, a round that has never got the attention that it rightfully deserves. For those of you not familiar with this proprietary offering, it's basically a .44 Magnum case necked down to handle the .357 slug. I've read that the initial version made use of a sharper, bottleneck case design. This was subsequently changed to a shoulder that is of a more gradual slope. I would guess that the latter was done to eliminate/reduce case setback in revolvers.

The Bain & Davis originated around 1962 and was first publicized in the January '64 issue of Gun World. As I understand it, most of the initial conversions were done using Model 27 Smiths, though it seems likely that some Ruger Blackhawks were

converted in those early years. By simply annealing an existing .357 mag cylinder and rechambering to the Bain & Davis, one can realize significant gains in overall performance. A useful practice with the Rugers has been to take .357 convertibles and rechamber the auxiliary 9mm cylinder. Another common frame for the round is the Thompson Center Contender. Originally, the Bain & Davis was a factory offering from 1969 to 1978 with the majority of the barrels being octagonal 10" variants (some 8.75" barrels were produced as well). Now days it's strictly a custom shop proposition.

The setback dilemma goes something like this: bottleneck cartridges in revolvers aren't reliable, or at least is what we've been led to believe. Historically, these types of rounds have been notorious for backing out of the chamber upon firing and causing cylinder lock-up. The first wildcat bottleneck I worked with in a wheel-gun was the .30 Streaker and initially setback did occur. I eventually came to find that clean cases (void of any oil/solvent) and correct shoulder position remedy the problem. Similar efforts with cartridges such as the .22 Jet and .256 Winchester Magnum proved that bottlenecks could function reliably in revolvers. One adaptation that I always found to be creative was Bob Booth's version of the .357 B&D (Guns & Ammo, March 1979). To eliminate any possibility of cylinder lock-up, Mr. Booth used a polycarbonate sleeve that fit over the neck of the case; this essentially gave the round the same outside dimensions as a .44 Magnum.



Though this did prevent the occurrence of case setback, the workaround does have some inherent flaws. For one, the polycarbonate sleeves tend to split upon firing and at best are only good for 2 rounds. Secondly, the adaptors are time consuming to make and material cost can nearly double the price of reloading. Beyond these limitations, I originally questioned the need to go to these lengths. As earlier noted, I had excellent success with the .30 Streaker and that has a much more pronounced shoulder step. With the gradual taper of the .357 B&D, clean cases and chambers should reduce the preponderance of lock-up.

Our first two .357 Bain & Davis' were built on Ruger Blackhawks in the Fall of 1997. The starting point in each case was a standard .357 Magnum with 6.5" tube.

Instead of using the existing factory cylinder, we decided to build unfluted versions that were line-bored to the barrel. Chambering reamers and reloading dies were also done at home to save on cost (this also ensured that the chambers and dies were cut using the same case dimensions). I consider this to be a worthwhile effort since a couple of different versions of the Bain & Davis exist; most of these varied with respect to shoulder position and neck length. As with all of our conversions, cylinder gap was held to a couple of thousandths and the action's lock-up was enhanced over that of a factory Ruger. My only regret was that our original cylinders were done in 4140 steel (we were out of 416 stock at the time). Unlike my dad, I'm a huge fan of things that resist rust and my .357 was in stainless. Nonetheless, I was pleased with the appearance of the gun once completed.

Forming the .357 Bain & Davis involves nothing more than running a well-lubed .44 Mag shell into a .357 B&D sizing die. In the cases we've prepared, the occurrence of ruined brass has been slim to none. Even though shoulder position is a consideration, it is no more troublesome to load than a round like the .38-40 Winchester. Case preparation is further simplified by the fact that a fire-forming step is not required. Powder selection is just as straightforward and includes the usual handgun assortment of 2400, H4227, W296, H110, etc. Since the ball powders tend to provide higher velocities for a given level of pressure I've used them almost exclusively in the Bain & Davis.

The .357 B&D's output is excellent. When compared to the .357 Maximum and .357 Herrett in 10" barreled Contenders, the following performance is returned (**See Appendix #1**). These figures may indeed be a surprise to some. Nonetheless, the Bain & Davis shows a degree of efficiency that equals and/or exceeds the Herrett and Maximum when used in the Contender. How this translates to the world of revolvers remained to be seen. Again, my hope was to equal or surpass .357 Maximum velocities with 158 & 180 grain bullets using a standard length frame. To accomplish this while observing case setback would be useless; the gun had to function at these levels with no occurrence of cylinder lock-up.

In testing the Bain & Davis on our Rugers, we initially did nothing to prevent case setback. That is, no steps were taken to remove excess oil/lubricant from the cases or cylinder walls. Secondly, we started with near-max loads just to see what would happen; interestingly enough, nothing did. With 25.0 grains of W296 behind a 125 Sierra hollow-point, the case did not back out of the cylinder. The gun generated a lot of noise and flash, but after 50 rounds not one instance of setback. Next we moved to the heavier bullets this time using 24.0 grains of W296 and a 158 grain slug. Again, we encountered no problems with overall function and extraction was effortless. That was five years ago and to date I've never had a case back out of the cylinder.

In strong guns like the Ruger Blackhawk, the .357 Bain & Davis is outstanding with respect to accuracy and speed. While I believe the Ruger Maximum to be a great advancement for .357 handguns, the long frame wasn't needed. A bottleneck such as the Bain & Davis can provide the same sort of performance in a lighter gun using common brass as the starting point. Moreover, the argument of case setback may be more myth than fact. Either we got very lucky in the guns we built or the redesigned

Bain & Davis (ie, the gradual shoulder) is revolver friendly. Direct comparison of the .357 B&D to the .357 Maximum Ruger yields (**See Appendix #2**). It becomes apparent that even with a shorter barrel, the Bain & Davis can exceed the Maximum by around 150 fps. That may not sound like much, but again the B&D can be done on any standard .357 Blackhawk.....the .357 Maximums run around \$500 - \$600 in excellent condition (that's assuming you can find one; Ruger only shipped around 9,000 and many have been converted to other SuperMag cartridges). Ideally, the Bain & Davis would be better fitted with a 7.5 – 8.5" barrel. Seeing as how Ruger doesn't offer these lengths, the best you can do from the factory is 6.5".

The .357 Bain & Davis has been around for decades and no doubt has been tried in many revolvers. I am still curious though as to why it isn't more of a common conversion. Existing cylinders can be annealed and rechambered while using factory .357 barrels. Furthermore, the performance gain over the standard .357 Magnum is way beyond marginal and SuperMag length frames aren't required. Consequently, the Bain & Davis gun store, which is located in San Gabriel, California, advertises the conversion on Blackhawks, Redhawks, and S&W 27s and 28s (<http://www.bainanddavis.com>). Another excellent .357 revolver wildcat is Gary Reeder's .356 GNR, which is based on the .41 Magnum. Unfortunately, I've yet to have a chance to work with this round but everything written about it is favorable. As with the .357 B&D, case setback doesn't ever appear to be an issue with the GNR.

If you have any questions, I can be reached at: sc429@yahoo.com

NOTE: The above-mentioned loads functioned in my gun(s) and did not show signs of excessive pressure. I am not responsible for them in any other firearm and recommend that they be worked up to incrementally.

See Picture Below:



.357 Bain & Davis on a stainless Blackhawk

TC Contender	Barrel	Bullet (gr)	Powder	Grains	Velocity (fps)
.357 Rem. Max	10"	158	W296	21.5	1,916
	10"	180	W296	19.3	1,700
.357 B & D	10"	158	W296	24.9	2,130
	10"	180	W296	22.5	1,895
.357 Herrett	10"	158	H4227	28.5	2,014
	10"	180	H4227	27.0	1,815

Appendix #1

TC Contender	Barrel	Bullet (gr)	Powder	Grains	Velocity (fps)
.357 Rem. Max	10.5"	158	W296	22.0	1,615
	10.5"	180	H110	20.5	1,480
.357 B & D	6.5"	125	W296	25.5	1,900
	6.5"	158	W296	24.0	1,740
	6.5"	180	W296	22.5	1,630

Appendix #2