Reloading the .300 AAC Blackout Using 5.56/.223 Cases

I’ve had my CMMG AR rifle chambered for .300 AAC Blackout for a couple of months and while I really like the .300 BLK cartridge, I’ve not liked the current price of ammo.

![Image of CMMG AR-15 type rifle with 16" SS .300 BLK Barrel]

One of the nice things about the .300 BLK round is that the only thing you need to convert a .223/5.56 rifle is a .300 AAC Blackout barrel. Everything else is exactly the same and no modifications are needed. Below is a standard 20 rd. Colt AR-15 magazine loaded with .300 BLK. So you get a round that is similar to the .308 Winchester in ballistics but can use a much more common AR-15 platform vs. the more expensive AR-10 style platforms. Further, if you are into suppressed weapons, the .300 BLK was designed with a subsonic option in mind. A 220-240 gr. Projectile will get you into the subsonic range.

![Image of Standard Colt 20 rd. AR-15 Magazine Loaded w/.300 BLK]

I’ve seen plenty offered in the $2.00/round range and paid as much as $1.75/round. The best price I’ve paid in the last 60 days is $1.25/rd. Since I like to shoot but also like to eat and pay the rent, I needed to see about reloading this cartridge. But .300 BLK cases are scarce and also expensive so that really didn’t help. But I read that it’s pretty simple to make .300 BLK cases from .223 Remington or 5.56 NATO cases which are readily available but also which I have a large supply of from my own shooting. I’ve reloaded quite a bit but have never modified cases before so this was new territory for me.
Where to start?

I already had all the basics for reloading. I had a Lee Turret Press, RCBS Case Trimmer, power scale, and the various other odds & ends needed to reload. To date, I’ve done most of my reloading for 9mm Luger and .357 Magnum and those were the only reloading dies I had available.

I know that many retailers are out of many reloading items but finding a set of Lee .300 BLK reloading die and a factory crimp die (not included with the set) didn’t take long. Midway USA had them in-stock. Lee’s web site lists them as “Very Limited Production” but I had no trouble locating a set:

![Lee .300 AAC Blackout Reloading Die Set](image)

I believe that some of the other reloading equipment makers offer .300 BLK dies as well, so if your preference is another vendor, I don’t believe there is anything unique about the Lee product.

I also needed a supply of small rifle primers, suitable bullets, and an acceptable powder. All three of these can be hard to find these days but I scored a 1# bottle of Hodgdon H110 at my local Gander Mountain, and I found a supply of CCI Magnum Small Rifle Primers online. There were several choices for suitable bullets. The .300 BLK was designed to be loaded with light 110 gr. Bullets, medium 150-180 gr. Bullets, or subsonic/heavy 200+ gr. Bullets. Since my .300 BLK rifle is not suppressed (yet) and all the
factory ammo I had was light/high-velocity 110 gr., I was looking for something mid-range. I located some 165 gr. Sierra GameKing soft-nose boat tail bullets that looked promising:

![Image of Sierra #2145 165 gr. .308 Soft-nose BT Bullets]

Figure 4: Sierra #2145 165 gr. .308 Soft-nose BT Bullets

Note that I found a number of comments that these bullets will not expand reliably at .300 BLK velocities in the 1600 fps range vs. the more powerful .308 Winchester velocity of 2100 fps or so. But I’m not really worried about that here, these are for target shooting or varmint-reduction use. If I were planning on using these for hunting purposes I would probably do some more research.

The nice thing about .300 BLK is that many of the bullets you might use with .308 Winchester/7.62x51 are suitable. I didn’t find a lot of reloading data for .300 BLK with mid-weight projectiles, but there was an article I found online from American Rifleman that discussed the .300 Whisper round which is very similar. Basically the specs for the proprietary .300 Whisper fit inside the SAAMI .300 AAC Blackout so loading for .300 Whisper should be appropriate for any .300 BLK rifle. The table from the article shows:
The closest match to what I have (Hodgdon H110 and 165 gr. Projectiles) is the “Berger MBTHP VLD” line at 168 gr. with 13.7 gr. of H110. That should produce about 1635 fps.
\textbf{The Process From Making the Brass to Finished Rounds}

The key to this project is making .300 BLK brass from .223/5.56 brass so here is a step-by-step process of how I did it:

1) Here’s the starting point. I had a mix of 5.56 NATO (most was Winchester/USA) and .223 Remington brass:

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{figure6.png}
\caption{.223 Remington Case Before Modification}
\end{figure}

2) First I cut down the .223 cases. Yes, you can use the case trimmer but it’s a lot of cranking. So I used an abrasive disk to cut most of the excess case length off:
I’m not actually cutting this one here. I stopped just before the end went flying off. I found after a bit of practice that if I cut right at the “shoulder” of the case, it was just about right. It took a bit of practice to get it right but after I was careful not to cut too short, I was able to cut down a bag full in just a few minutes. Wear gloves, sometimes they get really HOT!
3) De-prime and size the brass using the Lee de-capping/sizing die and a bit of Lee Resizing Lube:

This case is just coming down and you can see that it has a nicely formed shoulder and looks like a standard .300 BLK case except that the necked-down portion is a little too long.

4) Trim the case to the correct length:
Since I cut using the abrasive disc, the sized case is now about 1/8” too long. So it just takes a few cranks of the case trimmer to get it right on the mark. I tried trimming before sizing but I found that I needed to trim again since the cases got a little longer after being sized.

![Figure 10: Measuring Trimmed Case Length](image)

Here I’m measuring the trimmed case length at 1.36” which is within the SAAMI case length specification of 1.368 – 0.020 inches.

5) The case trimmer leaves a small burr on the inside and outside edges of the case. I have an inside case reamer but found that just running the case through the sizing die again takes care of the outside edge just fine:
Case coming down from the sizing die. At this point the case is a .300 BLK case. From this point forward, we treat this exactly like the actual .300 BLK cases.

6) The next step is to prime the cases.
Here is a CCI Magnum Small Rifle primer about to go in. Here is what it looks like from the business end:

![Figure 13: Primed Case Ready for Powder Charge](image)

7) I wanted to start low and work my way up to the 13.7 gr. of H110 powder that was shown in the .300 Whisper loading chart so I decided to make 5 different loads at 12.8, 13.0, 13.2, 13.5, and 13.7 and see how my results were compared to the data given in the table. So I carefully measured each powder charge on my scale:
This is one of the 13.7 gr. loads (obviously) and that amounts to just under 1.0 cc using the Lee dipper. (This is important later because I really don’t like to measure each charge out like this. I have a Lee Auto-Disk powder measure that I have since tested and found that the 0.88 cc disk gives almost exactly 13.7 gr. of H110 powder.) This was the most time-consuming part of the process since I was “trickling” out the powder to get just the right amount in each one.

I noted that the .300 BLK case has very little empty-space and you want to be very careful to avoid overcharging to prevent an excess pressure situation.
8) After charging the case, the bullet goes in:

![Figure 15: Bullet About to be Seated](image)

Here we have the Lee bullet seating die and the Sierra 165 gr. bullet sitting on the case. After seating the bullet we have an almost completed round:
9) The last step in my process is to use the Lee Factory Crimp Die to put a crimp on the case. (Sorry, I didn’t get a picture of that step.) After that I wanted to check my case OAL to make sure I’m still inside the .300 BLK SAAMI specs of $1.780 - 2.260\text{"}$. 
Here you can see that I’m at 2.150, well within the SAAMI specs for .300 BLK.
10) Finished round and just 49 more to do:

![Figure 18: 49 More Trimmed & Sized Cases](image)

Here's the entire set of them with primers installed:

![Figure 19: Primed and Ready for Powder Charge](image)
Just a couple more pictures before I get to the actual shooting. First here is a picture of one of my cut-down .223 cases next to an actual .300 BLK case. Can you tell which is which?

![Figure 20: .300 BLK Factory Case vs. Converted .223/5.56 Case](image)

The one on the left is a Remington .300 BLK factory loaded case and the right one is one of the ones I made:
And there are a couple of pictures of a factory round next to one of my hand-loaded rounds:

Figure 21: Primer-End View

Figure 22: Factory Loaded .300 BLK vs. Hand-Loaded Converted .223/5.56 Case
Even though they look good, if they don’t work right in my rifle they are a waste of time and money. Speaking of money, here is a breakdown of what I figure these cost to make:

- Bullet: $0.28
- Primer: $0.04
- Powder: $0.02
- Case: $0.00
- Labor: Priceless but enjoyable!

**Total/round: $0.34**

This is about ¼ the best price I’ve found for .300 BLK. That means 4X the shooting!
So what about shooting? Well this was an opportunity to test out my new Chrony F-1 chronograph. I fired all five of each powder load and the table below shows the velocity:

<table>
<thead>
<tr>
<th>Powder Load</th>
<th>12.8 gr.</th>
<th>13.0 gr.</th>
<th>13.2 gr.</th>
<th>13.5 gr.</th>
<th>13.7 gr.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1576</td>
<td>1507</td>
<td>1518</td>
<td>1542</td>
<td>1556</td>
</tr>
<tr>
<td>2</td>
<td>1478</td>
<td>1624</td>
<td>1572</td>
<td>1549</td>
<td>1600</td>
</tr>
<tr>
<td>3</td>
<td>1483</td>
<td>1575</td>
<td>1529</td>
<td>1576</td>
<td>1615</td>
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<tr>
<td>4</td>
<td>1527</td>
<td>1518</td>
<td>1568</td>
<td>1576</td>
<td>1592</td>
</tr>
<tr>
<td>5</td>
<td>1504</td>
<td>1531</td>
<td>1535</td>
<td>1580</td>
<td>1629</td>
</tr>
</tbody>
</table>

Average: 1513.60  1551.20  1544.40  1564.60  1598.40  FPS
Std. Dev.: 39.90   48.42    24.19    17.69    27.63    FPS
Spread: 98.00     117.00   54.00    38.00    73.00    FPS

Figure 24: Velocity at 5 yds.

Not sure about the #2 at 13.0 gr. That one is way off from expected. I’m not sure if that one had some extra powder or if the chronograph just got confused. But all the rest seemed to be about where I expected them to be. When I got up to 13.7 gr., my results are similar to the .300 Whisper article table.

My average at 13.7 gr. is actually just a little below where I think the maximum loading would put me so I’m pretty comfortable that this is a safe loading and that I have a bit of “headroom” before I get into the danger-zone. My intent here was not to push-the-envelope as far as loading this round but to get a combination that would provide a reliable and inexpensive load for the rifle. Even at the low-end I had no cycling issues with my rifle. I also noticed that all the ejected brass was landing in almost the same spot on the ground. That’s another indicator to me that things are right about where I want them to be.

So from this data, I’m pretty comfortable with loading up a batch using 13.7 gr. of H110.
Next Steps

As I noted earlier, the most time consuming part of this (i.e. tedious) was measuring each individual powder charge on the scale. If I was loading up match ammo I would absolutely do this since perfect consistency is the key there. But I have a Lee Auto-Disk Powder Measure:

![Lee Auto-Disk Powder Measure](image)

I found that the 0.88 cc disk setting gave me a uniform 13.7 gr. charge of Hodgdon H110 powder. So I will just use that instead of measuring each individual charge.
References

1) Advanced Armament Corporation’s .300 AAC Blackout web page:  
   http://300aacblackout.com/

2) SAAMI Specification for .300 AAC Blackout:  

3) American Rifleman – Loading the .300 Whisper:  

4) American Rifleman – Shades of Gray: .300 Whisper & .300 AAC Blackout  
   http://www.americanrifleman.org/articles/shades-of-gray/