

We decided to torture test my personal Six Sigma Arms Rifle. We wanted to know how much punishment our latest design could possibly take before we started to encounter issues. We literally wanted to make this rifle fail so we could understand how and why and make improvements.

The core improvements we have made go into every rifle we build and are not considered options. Every internal component was chosen because it is the best available. Paying attention to every detail down to the smallest spring has its rewards.

Follow us on a 16 month and over 4000 round torture test where we didn't add so much as a single drop of oil after the initial break in. We subjected this rifle to extended periods of below zero temperatures, cooked in it a black vehicle for the hot and humid summer months, left the bolt locked open for extended periods, rained on it, snowed on it, and hunted with it summer, fall, and winter.

If you treat your rifle properly it will give you years of dependable service but even if you choose to punish your rifle like we did, the performance is still impressive.

Here is the log:

Date:	Location:	Rounds:	Ammo:	Ammo Type:	Notes:	Tally:
9/17/2007	Eagle	225	55 Gr.	Black Hills Red Box	Initial Break in.	225
9/27/2007	Bills South	200	55 Gr.	Ultramax		425
10/12/2007	Bills South	150	55Gr.	Ultramax		575
10/23/2007	Bills South	100	68 Gr.	Black Hills Red Box		675
10/30/2007	Eagle	100	75 Gr.	Hornady TAP FPD		775
11/8/2007	BPR	300	55 Gr.	Ultramax		1075
12/5/2007	Bills South	200	55 Gr.	Black Hills Red Box		1275
1/11/2008	Bills South	350	55 Gr.	Ultramax		1625
2/22/2008	Chatfield	10	75 Gr.	Hornady Match BTHP	Coyote Hunting -5	1635
2/23/2008	Chatfield	10	75 Gr.	Hornady Match BTHP	Coyote Hunting -5	1645
4/30/2008	Bills South	150	55 Gr.	Ultramax		1795
5/22/2008	Kevin's WI	100	75 Gr.	Hornady TAP FPD	Green corrosion forming	1895
6/6/2008	Bills South	200	68 Gr.	Black Hills Red Box		2095
6/30/2008	Cabin	100	55 Gr.	Ultramax		2195
7/2/2008	Cabin	100	55 Gr.	Ultramax		2295
7/6/2008	Cabin	300	55 Gr.	Black Hills Red Box		2595
8/3/2008	Bills South	150	55 Gr.	Black Hills Red Box		2745
8/16/2008	Side Lake	200	55 Gr.	Black Hills Red Box		2945
9/11/2008	Bills South	250	55 Gr.	Ultramax	Compared to OTS AR	3195
10/17/2008	Hibbing	100	55Gr.	Ultramax		3295
10/31/2008	Eagle	60	75 Gr.	Hornady TAP FPD		3355
10/31/2008	Eagle	150	55 Gr.	Ultramax		3505
11/29/2008	Kevin's WI	150	55 Gr.	Ultramax		3655
11/29/2008	Kevin's WI	80	75 Gr.	Hornady TAP FPD	Bolt locked open after.	3735
12/2/2008	Bills South	200	55 Gr.	Black Hills Red Box		3935
1/8/2009	Bills South	100	55 Gr.	Ultramax		4035
1/8/2009	Bills South	200	55 Gr.	Reloaded Hornady PSP		4235
1/9/2009	Bills South	120	55 Gr.	PSP		4355
1/10/2009	Bills South	150	55 Gr.	Ultramax		4505
1/10/2009	Bills South	50	68 Gr.	Black Hills Red Box		4555
Time:	16 Months					
Total	4555 Rounds					

9/17/07 – Description: The start of the torture test. If you are going to punish a new rifle you might as well start with the first rounds! The first trip to the range with my new rifle and I'm out to have some fun.

Authors Note: I had 12 magazines with me all loaded up with 25 rounds each. My intent was to give this a good hot break in. I inserted the first magazine looked over to Curt and said “Ready!?” He nodded and away I went. I pulled the trigger 25 times as fast as I could. With ruthless efficiency I dumped the empty magazine on the ground and slammed another one home and hit the bolt catch. I continued spewing lead down range so fast my trigger finger actually started to cramp up. I heard someone say between magazines “I wonder where the war is?” but I continued as fast as I could. After the 9th magazine (225 rounds down range) just as I was grabbing number 10 I got a tap on the shoulder, “I think that’s good enough, the gas tube is glowing red hot!” So reluctantly I set my rifle down feeling unsatisfied that I didn’t get to put all 300 through it on the first day. Luckily there was another rifle at the range and I got to send my unused ammo through some paper and into the hill side.

9/18/07 – Description: Final oiling after the initial break in and torture test notes.

Authors Note: Little did my rifle know this was the last oil it would see in 16 months! Generally during this test I put the rifle back into the case hot. Sometimes so hot in fact you could barely hold onto it any more! Also when not stored in a vehicle it was put away barrel up in the safe so all the good grime and powder residue had a chance to run down into the action. Also I didn’t measure but I tried to leave the action locked back about ½ the time to stress the springs as much as possible.

11/8/07 – Description: Rifle was left in a vehicle until April 30 2008 where it was subjected daily to temperature changes ranging from -15°F to 69°F for extended periods.

2/23/08 – Description: Went Coyote hunting near Chatfield MN. It was subjected to crawling around in the snow and -5°F for two nights.

5/22/08 – Description: Noticed green corrosion forming on the end of the muzzle brake. Obviously this rifle has seen some rounds and neglect since it’s last cleaning. Corrosion reappears after extended periods of non-use.

6/1/08 – Description: With summer upon us, this would be a great time to cook a rifle in a black vehicle in the nice humid and hot Minnesota summer parking lots. The rifle was in my vehicle until September 14 2008 where it was subjected to Air conditioned temperatures over long trips and extended days in various parking lots where the temperature in the vehicle can reach as high as 159°F. Since this is a torture test, I made sure the bolt was locked open too.

8/16/08 – Description: First failure of any kind at nearly 3000 rounds. I had a new shooter with me who had never shot an AR before. She was nervous at first but managed to muster up the strength to try it after I showed her how much fun it was by firing 3 magazines. She failed to insert the magazine fully before activating the bolt catch. The bolt closed but failed to grab a round and the rifle clicked on an empty chamber.

Resolution: Hit the butt of the magazine firmly to seat it fully and operated the charging handle. The rifle operated flawlessly for the remainder of the session. .

Authors Note: This was a new shooter who didn’t have much experience with weapons of any type. We shot hand guns of various calibers and then I took out the AR. Her eyes lit up with a statement of, “What is that!?” After shooting about ½ of the magazine she stopped, turned back to look at me and said “Hands down, this one is my favorite!”

9/11/08 – Description: No problems today. I went shooting with a friend who purchased an “Off The Shelf” (OTS) AR a few years ago and has never fired it.

Authors Note: After I showed him the operation of his rifle and fired a magazine through it I let him take over. I then fired my rifle in the lane next to him. He looked at the optics and options I have and asked to shoot mine. I told him if he did he wouldn’t be happy with his own rifle any more. He accepted that risk and

loaded up a magazine. “Wow that is so much more fun than my OTS AR! Do you think you could build me one like yours?” It just so happens I can build them like mine! He was generally impressed with how quickly it came up, how well is balanced, and how little the felt recoil was allowing for quick and accurate follow up shots.

12/2/08 – Description: First real issue with the rifle at all. It failed to close the bolt fully on a brand new magazine that I had never used before. It did grab a round and nearly close on it but not enough for proper operation.

Resolution: I opened the bolt, which ejected the unspent round, removed the magazine, reinserted it operated the charging handle, and gave the forward assist a few good pushes. The bolt closed fully and it operated properly.

Authors Note: After that first failure the rifle operated properly for the rest of my 200 Round shooting session that day using other all new magazines. I’m not sure if it failed to grab the round because of the new magazines or due to the fact the bolt has been locked back, or due to the fact it hasn’t been cleaned in so long.

1/9/9 – Description: Victory is mine! I have punished this rifle to its breaking point. When I attempted to load the rifle, I had to literally force the charging handle back to get the bolt open. Then it would not close more than about ½ way even with no magazine inserted. I ran the bolt back and forth but could not force it closed with the forward assist.

Resolution: I didn’t have any oil with me of any sort naturally (always be prepared was the lesson learned here) so I asked the family next to me with 3 lanes if they had anything. All they had was a very small vial of what appeared to be a very thick red lithium type grease. I removed the bolt carrier group (BCG) and added a few dabs of that grease. My hands were now filthy beyond description (should have brought latex gloves too) from the build up on the BCG. I reassembled the rifle and operated the charging handle until things began to loosen up (10-12 strokes). I then inserted a full magazine and operated the charging handle and the forward assist for good measure. The rifle fired but short stroked, failing to pick up a new round and dry fired on an empty chamber. I operated the charging handle and it fired. It repeated this short stroke and dry fire process two more times. After the 3rd round down range, it came back to life. Operating as if it did on day one! I fired 117 more rounds with out a single issue and then headed home to disassemble and take pictures.

Authors Note: This test was done mainly with 55 grain cheap ammunition including reloaded ammunition, and remanufactured ammunition even though this particular weapon was designed for full power 75 grain self defense 5.56mm ammunition which operates with higher pressures and higher recoils. It was a fun test and it gave me a great reason to hit the range as much as possible which is never a bad thing. It will be interesting to see what exactly this thing looks like when I take it apart. I also will be interested to see if any parts are worn out or if it just needs to be cleaned.

1/10/09 – Description: No problems today. First time back at the range after cleaning this rifle for the first time in over 16 months!

Authors Note: Life is good. I gave the rifle a good cleaning. It took a lot longer than normal due to the amount of hard carbon deposits on everything. I then applied some oil to it assembled it and here we go! It managed to send 200 rounds down range without a single issue. Almost as if it has reborn to the condition in which I first assembled it! It has treated me well despite my abuse. It will be great to see how well this rifle treats me when I treat it the same.