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Terminal Bullet Performance

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Now I have something for you, Maybe? Still not to 100% sure yet, but sure is looking that way.

Something has been bugging me for many months, I just could not pin point it exactly, so I have said little of it, just floating around in the back of my mind.

Do you guys recall this, I know Boomy does as he was all over it.



Yes, that little 458 330 Barnes Banded. Incredible penetration, totally unexpected and I was happy and liking that bullet a lot for the 458 B&M, at least until barnes decided that FN solids were just a theory or myth, and that in reality RN is far superior. Until that point, I was a big barnes fan! Screw them now! But, as you can see the JDJ design, 350 grs, I considered excellent, and of course the BBW #13 was borne from this variation. Less penetration by 8 inches? Could not quite figure that out, I know that this is an equal nose profile to the barnes, if not better overall. Why less depth? Hmmm? Inconsistent media perhaps? Maybe? But normally any inconsistency (and there is) is from 1-3 inches from one mix to another, and even from one side to the other. Not 8 inches? Anyway, we continue on.

Some months ago we took the BBW #13s down in weight in .458 caliber, we did a 400 BBW #13 Solid and a 325 BBW #13 Solid. Tested very good in various .458s, 45/70, 458 Super Short, 458 B&M and so forth. These bullets I designed the nose so that they would feed and function through Marlin Guide Guns, which meant that the nose had to be shorter, more bullet into the case to keep overall length to 2.55 inches or so, in 45/70. I figured I could compromise, and we all could compromise on the nose, seat it out further in 458 Super Short and other various 458s we might use, and it would feed and function for all of us with the 45/70s and the Marlins, everyone has one or more of those, right?

Penetration was good, 325 running from 35-40 inches, 400 gr running from low 40s to mid 40s depending on velocity somewhat. Man, this was still a bug in my rear, it should have been closer to 50 inches or better, but since it was more than adequate, and it was dead straight I let it go as I did not understand anyway! But it was there.

Well, remember the recent test with the .474 350 BBW #13 in the 475 B&M Super Short?



It hit me that day! Look at the nose! Specifically, the length of the nose compared with the bands in the rear! The nose is longer!

There is no possible way that the .474 350 BBW#13 Could penetrate deeper than a 400 gr BBW#13 .458! Can't happen can it?



Or the 325 BBW #13 458 should be close to the .474 350 anyway, should it not?



But it is not to be? How in the world can just the length of the nose make such a difference?

Well I don't know, but I do know that there is something fishy here. The only theory, and mind you it's a theory, that I can come up with is that if we give credence to the "Bubble" effect, or a FN solid riding in a bubble developed by the meplat as it transits an aqueous material (my test medium is aqueous, animals are aqueous) then I theorize that the short nose is creating a bubble, but it is starting to collapse around the base of the bullet slowing it down quicker, causing more drag. Long Nose projection the bubble is collapsing further behind the tail of the bullet. I don't know this as fact, just pure theory, but I can come up with no other logical reason for it.

I was so sure of this that I had a long talk to Dan that very next Monday morning, first thing, and while he was doing other 458s that week to run off 15 boxes of new .458 325 BBW #13 Solids with a .600 projection, longer nose, to give a try. I received that order last week, so take a look.







Pretty amazing stuff I happen to think, but when it comes to solids they are very very misunderstood by the masses I think! There are many factors involved, and probably some we still have not discovered yet.

In light of this evidence it tends to lead me to believe some new things about how solids react. Although I am not quite ready to declare this as a 100% fact, I will give it some more time to pan out further. I can tell you this, on all the bullets that we designed with the Shorter Nose, to work through the lever guns, these will remain intact, as is, the lever gun boys still need proper bullets to run through those lever guns, those bullets will ALL be designated as LG---Lever Gun. The new ones with a longer projection of .600 will be either S or SS. These are, the two .500 caliber bullets, a 405 gr BBW #13 and a 375 BBW #13, both designed for my own 50 B&M Alaskan lever gun cartridge, and the current 325 and 400 BBW #13 for 45/70s and like lever guns.

I plan on new bullets with longer noses in those same weights and calibers. I will also do the NonCons along with. So in these calibers, .500 and .458 there will be two versions, LG and S or SS, not sure what Dan will designate the .600 projection on these? Why .600 projection? So they fit proper in my 458 and 50 Super Shorts. All the real big bore major weight solids and NonCons maintain a .700 projection or slightly better. That will of course remain as is and has always been. With the exception of some of my

own .500s, which somehow and no one can recall, myself included, come in with slightly less than a .600 projection, new ones in the future will have a longer projection rest assured!

Just when you think you know something!

Michael

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The New Word is "Non-Conventional", add "Conventional" to the Endangered Species List! Live Outside The Box of "Conventional Wisdom"

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posted 02 October 2011 20:54

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RIP

I really can't think of anything other than the "bubble drag" theory that would cause this phenomena, the nose profile is the same, the radius the same, the meplat size same, just the shorter nose design for those Marlins compared to the .600 longer nose. I am with you, regardless of the "Why", it is, so having both is not going to hurt anything, and anyway, I was able to make more shelf space with the cabinets added to the "Lab", so there! HEH HEH.....

Max, not sure if it was a great discovery or not, but seems to be something, not sure if I am ready to include that into our "Factors" effecting Solid Penetration or not, but you can bet your ass it is something I am going to keep in mind!

Regardless thereof, one still has to maintain the "LG-Lever Gun" bullet as is so it will give the Marlin Boys something to work with!

The others, for sure more suitable in other cartridges not requiring overall length of 2.55 or so. Not only that, but one improves powder capacity also, not that you have to seat the others so deep in many cases, but in the case of the 458 B&M Super Short, I need two of those bands in that short neck to get neck tension to hold the bullet, so I don't have a lot of room to play. With the longer nose projection that removes that issue. As it will in some other cases with some 458 cartridges.

I have both now, so when you get your BLR let me know I will send what you need to do some experimenting with.

No thanks needed! It's just what I do.

Tanz, I can't tell for sure, but looks like you are already celebrating perhaps? HEH HEH.....

Michael

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Posts: 8426 | Location: South Carolina | Registered: 23 June 2008







posted 02 October 2011 21:06

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Oh, and there is one more thing that I forgot to mention, but stands out to me. I know for a fact that the BBW #13 Nose Profile likes velocity. In many cases, it responds in leaps to extra velocity as for depth of penetration. Well that's ok, but when you are into 50 inches of penetration, 55 is of little consequence, but I have seen the BBW #13 Leap even further with velocity.

Now I noticed this with the shorter nose versions of the 325 BBW #13 tested in the 458 Super Short at 2250-2300 fps and then again in the 458 B&M at near 2600 fps, not much difference in penetration, and I expected it to increase by leaps and bounds, it did not. Neither did the 400 BBW #13. As you see above in yesterdays work, there was no increase at all in depth of penetration between 2225 fps impact and nearly 2472 fps impact, none, zero, nothing! I have not quite figured that out just yet, but if I had to speculate on this, I would say that by a light for caliber solid, such as this, has reached an upper end velocity on it's performance. That occurs with this it seems at 2225 fps, more velocity is not helping it at all. The actual impact peak performance may even be less, but we know it's not more. It's possible that each different bullet may have a peak performance velocity, but with the heavier bullets I have no way to test that theory here as I don't shoot or own an extreme velocity 458 or 416. Of course the 500 MDM is an extreme velocity .500, but I have not topped out any of the .500 caliber bullets yet. With the lighter weight solids I think we have, or so it most certainly seems that we have found a point to where velocity ceases to be one of the "Major" factors. I just thought that was interesting is all, and it's repeatable, so it must be so.

I have some more stuff, but still working on it, most likely get something put together for you tomorrow. I think this is pretty good stuff to consider for today.

Michael

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posted 02 October 2011 21:11

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OK OK, I forgot to mention something else that goes along with this short nose business, if you recall some of the test work done a few weeks ago with the Punch bullets that Dave Bush sent down, they also come up short, some less than BBW #13s, they had decent meplat size, and were not bad bullets at all, but that nose is short with those as well, so they work in the Marlin Actions! Short nose strikes again I think, even with other designs and profiles. So it's not limited to the BBW #13 Profile, I think its across the board in Nose Profiles.

Seems "Long" just works a little deeper than "Short"---Whew, Glad mine is Long!



HEH.....

Michael

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Posts: 8426 | Location: South Carolina | Registered: 23 June 2008



PAPI One of Us



posted 02 October 2011 22:18

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Theme: Old technology, re-invented..

Plumbata

The plumbata, with lead to increase the impact, ca. 3rd century AD



Ancient Greeks invented it; The Romans created an empire using it; Cutting Edge Bullets re-engineered it.

BBW #13 - PLUMBATA



http://www.romancoins.info/Mil...-spear.html#Plumbata

PAPI

Posts: 432 | Location: California | Registered: 01 August 2008



boom stick One of Us



posted 02 October 2011 22:24



Sometimes it's not the why but the what and the discovery of that mystery. Michael discovered there is an important aspect to solid bullet penetration. That's what makes this so great. Not taking anything for granted and testing everything and the myths are melting away and new things coming to light. I'm not sure what myths are left bust but we all owe the bullet myth busters a huge thank you. Any hope in CEB making a big bore prototype switcheroo omni omega raptor bitch bullet to test?

577 BME 3"500 KILL ALL 358 GREMLIN 404-375

we band of 45-70ers (Founder) Single Shot Shooters Society S.S.S.S. (Founder)





posted 03 October 2011 07:41

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Omniraptor is my choice due to its multiple personalities covering all bases! As a P-Sy-Kolojist, bi-polar is a hit.

Max

.395 Family Member DRSS, po' boy member Political correctness is nothing but liberal enforced censorship

Posts: 3490 | Location: Colorado Springs, CO | Registered: 04 April 2003

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boom stick One of Us



posted 03 October 2011 12:26

Hide Post

Sorry.

This Image Is currently Unavailable



Looking at this 370 grain non con with the Talon Tip (tm) it looks like by adding the reverse side flat nose/boat tail it could be pretty sweet as a light 350 grain 458 "Raptor" CEB BBW. Could probably shoot those out of a Lott at 2,600 FPS for Plains Game.

577 BME 3"500 KILL ALL 358 GREMLIN 404-375

we band of 45-70ers (Founder) Single Shot Shooters Society S.S.S.S. (Founder)

Posts: 27557 | Location: Where tech companies are trying to control you and brainwash

you. | Registered: 29 April 2005





posted 03 October 2011 21:39

Hide Post

I ask a lot from you guys, did you realize that? Yes, it's true, I asked that you step out of the box with me on the solids, you did, we all stepped out of the box and we see that some of the old rules we used to have concerning solids, no longer apply, and we made a new set of rules, factors that influence penetration, and we continue to do so, as we see on page 189.

I asked that you step "Out of the Box" with me concerning the NonCons, that match up with the BBW#13 Solids! You did! Or most of you did, some of you did, and some are continuing to step out of the box with me. I am learning, I know many out there are learning with the new BBW#13 NonCons and using them in the field with great success.

Over the next many weeks to come, I am going to ask that you step "Out of the Box" again and again to bring some concepts to the table for you. And probably go far beyond concept to having bullets in hand to use and try.

Today, I am going to begin with something that I am pushing, and that has been the "BBW#13 Carnivore" and it's purpose and what it does. You will need to step "Out of the Box" with me on that as well.

Lion Bullet? Of course anyone familiar with Art Alphin knows the Triad of A Square bullets, of which the "Lion Bullet" is one of those. I think a horrible bullet and actually very dangerous and just might get your ass eaten! The concept was that the bullet would get inside the body cavity and explode in the internal organs, just blowing a lion to bits and pieces inside. It probably worked pretty decent as long as everything was 100% perfect, bullet came in contact with no bones or heavy muscles or anything that might cause it to blow prematurely. But since when is anything ever perfect in the field? Rare, very rare! I know I could not possibly have made sure I shot between rib bones on the lions I shot! How about slightly angled shots? Frontal heavy muscle shots? Oh and any number of other things. This was a dangerous to man bullet, not dangerous game bullet!

I am extremely interested in this concept. Where the A-Square Lion Bullet is a failure is that it lacks a very very important component! It lacks a method of "Penetration". Being "Conventional" it is made up of a lead core, thin copper jacket, and nothing remaining intact to penetrate once it blows to bits, very much like that Berger in 308 we tested the other day. While something like that might be dandy on a deer, if something goes wrong most deer don't have a tendency to want to eat the shooter afterwards! Lions, bears, leopards things like that, they have that nasty tendency to seek revenge upon the individuals who are screwing around with them.

Lions, leopards, bears and such are not so hard to kill with proper shots, I think nothing like a buffalo by any stretch. But, hard to kill or not, one really wants to put one on the ground just as quickly as possible, to inflict such terrible trauma that with a proper shot you get some very serious and immediate effect. That is the goal, put them in the dirt quick, leave nothing to chance with these animals. They are fast, cunning, and can rip you to shredded paper faster than you can blink twice. So you want something to just hammer the crap out of them.

The very concept of Art's Lion Bullet. But a big problem, no method left for sure penetration once it blows to bits.

Now, enter the BBW #13 Carnivore! Very simple, we already have the BBW #13 Solid, followed by a BBW #13 NonCon. We go just one more step to the BBW #13 Carnivore and all we have to do is deepen the cavity of the current BBW #13 NonCon. What does this do for us? This introduces a new dynamic, it lengthens the blades that shear off, larger, longer, and heavier as well. In theory these longer blades will slice and do more damage quickly to internals of thin skinned dangerous game, being larger doing more damage and inflicting more trauma to the animal immediately, and destroying vital lung, heart, vessel tissue in the process. The big important positive is that we still have a remaining slug that continues to penetrate straight also destroying tissue along it's path, and making sure there can't be a failure due to "Lack of Penetration", our "Ace in the Hole" you might say!

The NonCon works, and would work very well in this role, no doubt about it, I have used them, many others have used them, and they work. They would work on these thin skinned species as well, and I think better than conventional could. With the Carnivore, I want to take it one more step inflicting greater trauma, and I believe the Carnivore will do just that.

OK, it's time to step "Out of the Box" for a minute and take a look.

The first of the Carnivores, the prototype, were in .500 caliber, I asked Dan to take our current 460 BBW #13 NonCon--The NonCon match to the 500 gr BBW #13 Solid, and take the depth of the cavity from .400 deep, to .800 deep. Just by luck I suppose it was the right depth for that particular bullet, however this bullet I don't think was scored inside for shear, nor undercut outside for shear, so shear was not even or quite complete in some of the tests, results in test medium was mass destruction. I was only able to use this bullet on one animal this past June, a Waterbuck at 106 yds as I recall, and the results were just as destructive in the lung tissue as it was in the test medium. In fact, there were sections of the lungs that were completely sheared off, one the size of my fist. Trauma was immediate and final. This animal did not run. It could not run. It was done.

Now Dan and I had much discussion about this bullet, but new ones now are scored inside, and undercut outside as well for a more positive and even shear. I asked Dan to make some experimental ones in our most popular calibers, 458 of course, and 416.

Now here is the catch, a Carnivore needs to be made from the largest, longest, heaviest of the BBW #13 Solids per given caliber! Even though that brings the weight down and the bullet is EXTREMELY LONG for that weight, it has to be, because you want the longest and heaviest blades or petals that you can get for shearing and slicing through the vitals, inflicting horrendous trauma to target. So to get those long ugly blades, you need a long bullet, even though it is very light for length! See below some photos of





Now as handloaders we must keep in mind, although this bullet weighs 350 grs, it CANNOT be treated as a 350 gr 416 caliber bullet! It must be treated in the same manner that you would the 400 and 370 gr BBW #13s. This is something that Dan will have to make note of on the box to make sure that folks understand this. You can see the difference in length compared to a 350 BBW #13

For the 458 Carnivore we used the current 480 BBW #13 Solid, 450 BBW #13 NonCon, and come out with a 430 gr BBW #13 Carnivore! It is the same bullet as the 480 Solid, deep cavity HP. Can't be treated as a 430 gr bullet!

I knew media destruction would be too much to attempt to test 4 bullets in one box, so I did two and two, which last time I checked came out to 4 anyway! I was correct, destruction is incredible, and one has to toss the test medium after two shots, large gapping holes.

Here they are;





Blades 6-12 Inches, large blades remain center channel to 10-12 inches Trauma 2-8 Inches





X2--23 Inches Blades from 6-8 inches Trauma 2-8 inches



Unlike the standard BBW#13 NonCons, these do not shear in a star pattern, or evenly shear. These shear and the thinner blades do move away from center, the larger blades looks like two together that did not come apart, those stay closer to center wound channel and cause even more destruction in the center. Thinner blades going off from center to rip and tear at other vital tissue. Thinner blades penetrating to 8 inches, larger blades staying closer to center going as far as 10-12 inches. Massive destruction of test medium. Remaining slug weighing around 260 grs continuing to penetrate to 23 inches, dead straight.

"Out of The Box". 260 grs! Broken blades, broken bullet? No Man, can't happen, FAILURE? Wait a second, how much penetration did that remaining slug go to??? 23 Inches? Ok, what does that mean?

I relate to buffalo bullets! What is a buffalo bullet? 458 Lott, 500 gr Softs 2250 fps, that should do it! 500 Swift A Frame--24 inches, 500 Woodleigh Soft--20 Inches, 500 Nosler Partition--19 Inches, 450 Swift A--22 inches, all in this test medium, and I have shot buffalo with all of them except the Nosler Partition! So now we have the remaining part of a 430 gr BBW #13 Carnivore going to 23 inches in the same test medium, Yes, no doubt in my mind that this will be more than enough for the biggest lion that ever walked, the biggest leopard that ever existed and the biggest bear on the planet, and I would leave first thing in the morning with that same bullet and load and be 100% confident that I would not fail. Now I can't say for you, you must decide that, but I know right books where it would not be here right now typing away, I would be loading these Carnivores up for that mission, and I would be loading some BBW #13 Solids and standard NonCons also for those just in case I run across an elephant or buffalo scenario! It saystem, one that works.

Testing is not over of course, during this week I will be going to medium and lower velocity impacts to see how these react. Then I will take it to the 416 and the BBW#13 Carnivore to test it as well, reports here as the work is completed.

Sam shot a deer last year with the .500 Carnivore, dropped to the shot. I shot the Waterbuck in June this year, and it also dropped to the shot. Now here is another point in the system, waterbuck was not my goal and it was shot at 106 yds. I had shot elephant and buffalo with the 500 MDM sighted at 50 yds, 1 inch high or so, with the 500 gr BBW #13 Solid and the 460 gr BBW #13 NonCon, the 430 Carnivore shot about 1 inch higher than the other BBW #13s, and I actually could have brought that POI closer if I wanted, but did not need to. So you can get all three of these bullets shooting the same or very close to the same POI at Dangerous Game distances pretty easy, just start out using the exact same load for all three! It's a "System", a Dangerous Game System.

But--You have to "Step Out of the Box" to get there!

Michael

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michael458 One of Us

posted 03 October 2011 22:11

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I had our Weekly Conference with Dan this morning! Boy, he is excited I am here to tell you! What has Dan so excited?

Something called a ESP Raptor? Let me find my notes, let's see, oh, here they are, OK, ESP--Enhanced System Projectile! Hmmmmm? OK, yes, not bad. I like that! Oh, and I am afraid I did have much more influence upon the name of this than what I had actually intended;

ESP Raptor, the new name for the old Switcheroov bullet!

I see we have Boomies endorsement of the Raptor, very important, Boomies concept you know! Papi did put a lot of thought, lot of work into it, and Raptor just sounds perfect, at least to me. Combine that with ESP, and it's all over, Dan liked it a lot, but that is not what he was all excited about this morning!

Seems they did a little accuracy test with the 308 caliber 130 ESP Raptor this weekend, with an extremely finicky 300 WSM they have. It rained on them the entire test, but low and higher velocity in the 300 WSM, I think from 3000-3350 fps, they shot 1/2 inch 3 shot groups, all day long with the ESP Raptor with the tips on! No special loading, no special load work ups, and two different powders, seems there is zero issues with accuracy and the "Raptors".

The test work has been so successful now, that the ESP Raptor is being taken to a completely new line of bullets in all standard calibers from .257 to 375 to begin with!

Enhanced System Projectile! Think about it, BBW #13 Solid on one end, BBW #13 NonCon the other end, tip it, long range bullet, no tip, the 130 308 version is perfect for the lever guns as is, 30/30s with no tip. High velocity, yep no problems, still a terminal bomb, and penetration deeper than any conventional, low velocity, should be fine, I intend to test even in 30/30 and see what happens! Solid or NonCon, accurate, tips or no tips, it is a System Projectile, no doubt about it! Boomy, it's an incredible concept, absolutely incredible, HELL--I would not give two cents for a small bore, but I find myself getting very interested in these bullets, and some of those finicky small bores I have, like 358 and 338, maybe even a 6.5 WSM? Holy Cow!

You people are going to have to "Step Out of The Box", once again with the ESP Raptor!

I understand there will be boxes of 50 each of these, they are small bores! 25 tips will be included with each box, and tips will be available separate from bullets as well. Tips are expensive it seems, and do add to the cost, hence only 25 being added per box. I don't know what the costs are for the bullets yet, but I am sure they will be competitive, not cheap, but reasonable and they are meant for hunting, not for cheap plinking. If I have a caliber, I will test all of them. There are some small bores I don't have. But I have little doubt of what they are going to do either!



So there you have it, the ESP Raptor!

Michael

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