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Terminal Bullet Performance

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## Terminal Bullet Performance

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**Warrior**  
One of Us

posted 25 November 2009 20:41

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Energy dump and transferring of shock remain controversial issues in the killing equation. Unless it is a shot to the central nervous system, killing boils down to an animal bleeding to death, and that is related to the size of the hole through the vitals (more particularly the heart, so we have a common point of reference).

That brings us to expansion of diameter of the bullet at its widest point, with intact petals through the heart to severe and cause damage to the blood pumping organ, including the arteries at the top of the heart, so the blood can spurt out at the fastest tempo to cause incapacitation.

When these conditions of bullet behaviour is present, one can imagine that there is clearly a visible effect vis-a-vis a non-expanding solid bullet that just passes smoothly through with a small hole, and the animal runs (instead of collapsing) until he/she finally succumbs to blood loss some time and distance away. Many PH's have reported on this, such as Ganyana particularly with controlled expansion bullets on buffalo.

Warrior

Posts: **2273** | Location: **South of the Zambezi** | Registered: **31 January 2007**



Would you call this a small hole through the aorta from a solid bullet? It is right at 4 inches.



465H&H

michael458  
One of Us



posted 25 November 2009 22:55

[Hide Post](#)

RIP

First let me catch up, Yeah, I will get hung up when it comes to bullets, sometimes I will discount some less important items, but non the less part of the whole. Thanks for keeping me in line! I will try and keep a little less "anti" into the equations.

Guess we go with Witness Cards, sounds good enough, and kinda has stuck with me too. Whatever we call them-- they are great!

Your .510 450 gr HV at 2800 will be, I guarantee it, a hammer of Thor on buffalo in the 500 Mbogo! I know this without having to even give it much consideration.  
Good solid, and you are good to go, no worries at all.

Warrior

It can be as controversial as you want it to be. It is not a controversy with me. I watched 13 buffalo drop to the shot with these NONCON bullets and none of them were hit in the central nervous system. Not one! Only 1 was able to get up and start again. Which he did not get far. Succumb to blood loss, oxogen deprivation, or whatever the cause I really don't care, I watched this happen and it is repeatable, for lack of a better term I call it a transfer of energy/trauma/shock that is tremendous. No, it is no controversy with me at all, it is just very simply a fact.

465HH

Well, looks like yet another transfer of energy/trauma/shock even with a SOLID. Looks like a pretty damn big hole to me! I'd say that would do the job every single time! Excellent show my man, just excellent!

Sometimes things just work and it is very hard to explain why, what, how, and so forth. If it does it consistently enough, I can accept that. Imparting tremendous trauma upon an animal is seen rather commonly in particular on creatures of less stature than buffalo, deer are commonly knocked off their feet with high velocity, fragile bullets. Not by me of course, I make no claims as I really don't hunt deer, but I have seen it, and have heard it many times. Not CNS hits either. It happens and if one can find a dependable bullet that will do this on a particular creature, then fine, don't have to explain it to me, it just is! Massive transfer of energy, trauma, shock, or whatever you would like to give a term to it.

Now, did a little test work today, give me a bit to get it put together.

Michael

<http://www.b-mriflesandcartridges.com/default.html>

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



boom stick  
One of Us



posted 25 November 2009 22:55

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Here is a pic of Robs patented "Quadracone"

I was wondering how a "blunt tip" solid would perform compared to a flat nose solid.  
I would think they might feed better than a truncated cone design and feeding is a big deal when your life is on the line.  
There is a lot more frontal surface than any other design for damage.

What are your thoughts?

□

[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: **2757** | Location: **Where tech companies are trying to control you and brainwash you.** | Registered: **29 April 2005**



michael458  
One of Us



posted 25 November 2009 23:12

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Boomy

Don't have a good answer for your question concerning the "Quadracone". I suppose it depends on what your target is. Thin skinned 2 legged dangerous game I would think it would be pretty good. Thick skinned, well I think penetration might be short? But I don't know the weight of the projectiles, diameter, ?????? Lot's of questions before I could answer, and then that would be worth what you pay for it since I have nothing to compare it to, or have not tested it.

M

<http://www.b-mriflesandcartridges.com/default.html>

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





More NONCON bullet works!

Today I was curious about the 416 caliber 330 gr Brass HP once more, this time at a lower velocity. I did this test once again out of the same 416 B&M rifle at 1715 fps impact velocity. A couple of things changed, but not much. There was a noticeable amount of less destruction of the mix, no big surprise there, and penetration decreased to a total of 16 inches at 1715 fps as opposed to 21 inches at 2546 fps. Petals sheared off exactly the same, at 5 inches, just behind the 4 inch witness card, same as the test at 2500 fps. So shearing of petals is pretty consistent even with a difference of 800 fps in velocity! Bottom end? Don't know yet!

Sure was pleasant to shoot too! It would also lead me to believe that one might be able to make a lower velocity cartridge a little more effective? Say a 300---350 gr bullet in 458 caliber, for 45/70?



Michael

<http://www.b-mriflesandcartridges.com/default.html>

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





Next I had to retest my 470 gr .500 caliber Copper HP that was so successful on the aussie buffs. Wanted to see what the witness cards showed me.

The copper bullets do not shear petals all at once. It had appeared to me in early tests that they hung on and come off during penetration. That's what they did again today. Instead of shearing off like the brass petals all at once, then continuing to go AWAY from center as they penetrate, the copper petals come off during penetration and stay within the already damaged area. Every petal I found was within the already traumatized zone where the bullet had passed. None were found outside away from center. This is what I have found in the past, but never gave it much thought until now seeing what the brass bullets do, and what the witness cards have allowed me to see even better! Another PLUS for the cards!

Energy transfer, trauma transfer was tremendous from 2 inches in all the way to 16 inches, then the bullet started to slow down and penetrate to a total of 24 inches. Penetration was 100% dead straight line penetration, bullet found nose forward just past the 24 inch card.



I can very easily see why this knocks the hell out of an animal, there is no big mystery here to be solved. It is rather evident, and on top of it the most wonderful thing occurs, great penetration!

I have much more work to do, but probably be Friday and next week before I get to it. I have today a new delivery of North Fork Solids--416 370 gr bullets and 458 450 gr bullets. I have samples of 410 gr GSC Solids that Buffalo sent to me, and with a new extra box we will be able to stop them and get a measurement on them, and on my 550 gr .500 caliber solids.

In addition to these, I have more NONCON samples being sent in 458 caliber, maybe by Friday, but most likely next week!

I put in a order today for 500 of the 350 gr .500 caliber brass bullets I tested yesterday--these will be a tremendous boost for my 50 B&M Super Short, and one hell of a hog/bear bullet in the 50 B&M. I also ordered 500 of the 416 caliber 338 Brass HPs tested yesterday and today! We will see some of these go to the field in the near future I hope!

Gentleman, each and every one of you, have a great Thanksgiving!

Michael

<http://www.b-riflesandcartridges.com/default.html>

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**boom stick**  
One of Us



posted 26 November 2009 00:28

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Well the pic shows the .729" 12 gauge size but I was thinking of a similar design, bore rider and blunt angle tip with nominal bullet weight of say .270 to .3 SD

I was wondering if it would give decent penetration and maximum damage.

quote:

Originally posted by michael458:  
Boomy

Don't have a good answer for your question concerning the "Quadrcone". I suppose it depends on what your target is. Thin skinned 2 legged dangerous game I would think it would be pretty good. Thick skinned, well I think penetration might be short? But I don't know the weight of the projectiles, diameter, ?????? Lot's of questions before I could answer, and then that would be worth what you pay for it since I have nothing to compare it to, or have not tested it.

M

[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**



**capoward**  
One of Us



posted 26 November 2009 10:38

[Hide Post](#)


quote:

Originally posted by michael458:  
Gentleman, each and every one of you, have a great Thanksgiving!

Michael

Michael,

Thanks for the tremendous and time consuming work. Have a great Thanksgiving also...and to all AR members and thread participants as well!

Jim   
*"Life's hard; it's harder if you're stupid"*  
John Wayne

Posts: **4954** | Location: **Central Texas** | Registered: **15 September 2007**



**capoward**  
One of Us




posted 26 November 2009 11:52

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Michael,

Your time permitting...and presuming it would peak you interest... is there any chance that you could run NONCOM Witness Card performance tests using the 470gr SST HP's with lowered impact velocities of 2200fps, 2000fps, and 1800fps and display the results for us? Thanks!



Jim   
*"Life's hard; it's harder if you're stupid"*  
John Wayne

Posts: **4954** | Location: **Central Texas** | Registered: **15 September 2007**





Boom

So you are talking a "solid" with the semi pointy nose such as the photo above?  
If so, then no I don't think it would impart as much trauma as a FN of the same design.  
Penetration? I would not think it would penetrate as well as a FN either. Now the operative word here is "think"???  
I am not sure without testing, those are my thoughts however, but I have been wrong before too!

Jim

Yes, I can do the 470 at 2200--2000--and 1800 FOI. For Our Info! I just received a new batch of 470s recently (500).  
I was getting very low on these from the previous 500 batch.  
The new ones seem to shear petals at lower velocity, possibly a bit different basic stock, not sure. But the ones we tested in Daryls new 50 B&M would shear at 50 yds from a 2200 fps start, so that is down to around 2050 fps or so.

Of special note, not sure anyone picked up on this but I think it is something to consider.

As we have seen the brass petals shear off around 2-3 inches in most cases, petals move out and away from center as they penetrate to around 7-9 inches total. The copper petals do not do this! The copper petals shear off within the trauma zone of the main projectile! They shear in a longer distance, from 8-16 inches remaining in the center of the trauma and destruction area. Now good or bad, I am not sure. I don't think the buffalo I shot with these give a damn. However two things to ponder--1 since they do not shear outward and away from center like the brass ones do, they do not touch new tissue around the center of the bullet. 2 Are they assisting producing extra trauma within the core of destroyed tissue instead? Does it really make any difference? I doubt it really does matter, but worthy of note regardless.

<http://www.b-mriflesandcartridges.com/default.html>

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



Micheal, is correct foot pounds of energy is not conserved in an "enelastic collision" momentum is conserved in all collisions. A bullet strike is an "enelastic collision". Energy is only conserved in an "elastic collision" where both of the stiking bodies remain in motion.

Collision Concepts Page 1 of 1

HyperPhysics\*\*\*\*\* Mechanics R Name Go Back

http://hyperphysics.phy-astr.gsu.edu/hbase/colcon.html 2/28/2009

A 9mm may expand to a larger diameter, but a 45 ain't going to shrink

Men occasionally stumble over the truth, but most of them pick themselves up and hurry off as if nothing had happened.  
- Winston Churchill

Posts: 5077 | Location: USA | Registered: 11 March 2005



RIP  
one of us


posted 26 November 2009 20:15

[Hide Post](#)

BS!  
I assure you, in a Newtonian system, the kinetic energy of the bullet is conserved in any collision, elastic or inelastic. It is converted to heat, sound, splatter, and other energetic products.

Conversions of mass to energy and vice versa require Einstein, and are not needed for this discussion.

The cartoon posted does not cover Relativity either. It is too small to read. I gave up when I made out the words "rubber ducky" and "two trucks."  
I was straining my eyes to read that.

DRG says: "Kiss my liberal grits!" 

Posts: **28032** | Location: **KY** | Registered: **09 December 2001**



jwp475  
One of Us



posted 26 November 2009 20:24

[Hide Post](#)

True the energy is transformed into other forms of energy, but not conserved in an enelastic collision.

-----  
A 9mm may expand to a larger diameter, but a 45 ain't going to shrink

Men occasionally stumble over the truth, but most of them pick themselves up and hurry off as if nothing had happened.  
- Winston Churchill

Posts: **5077** | Location: **USA** | Registered: **11 March 2005**



eezridr  
One of Us

posted 26 November 2009 20:27

[Hide Post](#)

KE can be dissipated by heat/ friction, plastic deformation, elastic deformation or fracture or a combination of any of the above. I did not pull this off the internet. Just an old Mechanical Engineer.

Posts: **3256** | Location: **Texas** | Registered: **06 January 2009**



Robgunbuilder  
one of us



posted 26 November 2009 20:41

[Hide Post](#)

Hey- My Quadracones were developed for "Gangsta Wacking" not Buffalo. It was designed for the 12GaFH double as a excellent tool for taking out whole carloads of "gangsta's in Civics! Gimmeabreak!-Rob

Never underestimate the power of stupid people in large numbers to do incredibly stupid things- AH (1941)- Harry Reid (aka Smeagle) 2012  
Nothing Up my sleeves but never without a plan and never ever without a surprise!

Posts: **6314** | Location: **Las Vegas,NV** | Registered: **10 January 2001**



eezridr  
One of Us

posted 26 November 2009 20:46

[Hide Post](#)

Rob,

Got any pics of the "terminal effects"?

Posts: **3256** | Location: **Texas** | Registered: **06 January 2009**



Macifej  
One of Us

posted 26 November 2009 20:55

[Hide Post](#)

quote:

Originally posted by eezridr:  
Rob,

Got any pics of the "terminal effects"?

Rob lives in a really bad neighborhood ...

Posts: **13301** | Location: **On the Couch with West Coast Cool** | Registered: **20 June 2007**



Bwana\_Dave  
One of Us

posted 26 November 2009 21:34

[Hide Post](#)

Michael,

Fantastic setup. Want to swap homes? :-)

Do you have any photos of Hawk bullet impacts? I am going to try the .458 480 grain round nose with a 0.025 thick jacket on deer in my .450 NE Searcy DR when it is finished. I figure it will expand on a light target and the 480 grain bullet is what it will be regulated with. MV should be 2100-2150.

TIA

Use a double rifle. It just feels better.

Double Rifle Shooters Society

Posts: **190** | Location: **Somewhere, I think.** | Registered: **20 June 2009**





**boom stick**  
One of Us



posted 26 November 2009 22:13

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quote:

Originally posted by Macifej:

quote:

Originally posted by eezridr:

Rob,

Got any pics of the "terminal effects"?

Rob lives in a really bad neighborhood ...



I seriously doubt that

[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**



**boom stick**  
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posted 26 November 2009 22:15

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quote:

Originally posted by Robgunbuilder:

Hey- My Quadracones were developed for "Gangsta Wacking" not Buffalo. It was designed for the 12GaFH double as a excellent tool for taking out whole carloads of "gangsta's in Civics! Gimmeabreak!-Rob

Rob... Was thinking of a Unicorn...  
Say .270 or .3 SD

was wondering if the increased frontal area and side deflection would increase damage and penetrate enough.

[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**



**Macifej**  
One of Us

posted 26 November 2009 22:56

[Hide Post](#)

quote:

It is converted to heat, sound, splatter, and other energetic products.

... mojo, karma, joojoo, voodoo, etc.

Posts: **13301** | Location: **On the Couch with West Coast Cool** | Registered: **20 June 2007**



**capoward**  
One of Us



posted 27 November 2009 11:13

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quote:

The new ones seem to shear petals at lower velocity, possibly a bit different basic stock, not sure. But the ones we tested in Daryls new 50 B&M would shear at 50 yds from a 2200 fps start, so that is down to around 2050 fps or so.

Michael,

This potentially raises a very interesting NONCON situation. If one can identify the, for lack of a more proper term, "composition mix" *change* between the original copper stock and the new copper stock used for the construction of the 470gr HP then it raises the potential of specifying a specific copper "composition mix" within a NONCON bullet design to target a specific level of penetration before petal shear. Hopefully that makes sense?

Also, a question relating to the your 416 B&M and the 330gr SST Brass HP bullet...could your use of the 14" twist rate have contributed to the instability of the bullet at the 18"+ level of penetration? Basically, could a 10" or 12" twist rate perhaps contribute sufficient additional rotational spin to maintain straight line penetration for the entire 21" length?

Jim

"Life's hard; it's harder if you're stupid"  
John Wayne

Posts: **4954** | Location: **Central Texas** | Registered: **15 September 2007**



**michael458**  
One of Us



posted 27 November 2009 12:53

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Jim

Well I agree with you concerning the composition mix of the material, I suppose one could do just that. Mind you, I am not 100% sure there was a change in composition, just suspect. There could be other reasons, or it might just be my imagination too until I test proper. Which when I try to give you your 2200--2000-1800 it will show then I think, especially if they shear at 1800.

As for the 416 B&M and that last inch or so of stability, yes, I attribute that directly to the 1:14 twist rate of the 416. I suspect that 1:12 would perform exactly like the .500 caliber rifles at 1:12, dead straight after shearing petals all the way. The 416 is close, 90%-95% of total penetration now.

BwanaDave

Thanks, but I think I will hang on where I am, sorta like it around here.

Several years ago I played with a lot of different Hawk bullets. They are very soft, and readily expand. I will dig around and see where those samples are. I think what you are attempting won't be a problem and they should explode deer, I think you will see that energy transfer that I have been yapping my mouth about. Next time I do some photos I will look up those samples I have. As I recall I tested 350 and 400 gr 458 samples in 45/70 and tested some samples in 338 caliber. I still have a load of them on the shelves. I had a couple of issues with them, first was accuracy, I had to work a little too hard to get a good load. Second, a little soft for most anything I was going to shoot.

I did get some good loads however that did shoot well, just had to work a little at it.

RIP JWP EZ

Whew, way out of my league with enelastic, elastic this that and voodoo magic what you say ok what ever collision splattering rubber duckys plastic deformation, I suppose that happens when the rubber ducky hits the truck, and that is where elastic deformation comes from along with heat/friction melting the rubber ducky causing some sort of elastic collision with enelastic something or other, ok no I don't get it but thats ok I am a forester, not supposed to get it! On top of that not sure I want to get it! 🤖

Michael

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



**Bwana\_Dave**  
One of Us

posted 27 November 2009 16:14

[Hide Post](#)

Michael,

Can't blame you for not wanting to leave such a fabulous setup. Thanks in advance for your help. I load for .45/70 as well, so your results will be most welcome.

Use a double rifle. It just feels better.

Double Rifle Shooters Society

Posts: **190** | Location: **Somewhere, I think.** | Registered: **20 June 2009**



**Whitworth**  
Moderator



posted 27 November 2009 17:18

[Hide Post](#)

I've used Hawk Deadsoft bullets in both my .458 Lott (500 grains) and my .416 Remmie and they are *really* soft. I have had complete jacket separation on a smallish hog years ago and wouldn't recommend them for anything bigger than deer-sized game. JMHO.

"Ignorance you can correct, you can't fix stupid." JWP

If stupidity hurt, a lot of people would be walking around screaming.

Semper Fidelis

"Building Carpal Tunnel one round at a time"

Posts: **13440** | Location: **Virginia** | Registered: **10 July 2003**



**ALF**  
one of us

posted 27 November 2009 17:41

[Hide Post](#)

Posts: **7852** | Registered: **16 August 2000**



**DWright**  
One of Us

posted 27 November 2009 17:55

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<http://www.mazamasportinggoods.com>

Posts: **1324** | Location: **Oregon rain forests** | Registered: **30 December 2007**



michael458  
One of Us



posted 27 November 2009 18:03

[Hide Post](#)

Alf

I am sorry--I had to come revise the beginning of this post, I can't imagine where my manners were;

Top of the morning back to you, and Hope your day is going well and will continue to do so!

I do believe we are all actually talking about the same thing--I term it energy or trauma transfer, others probably a more proper term "inelastic-elastic" But it appears from your description the same sort of thing!

No, not ignoring the energy transfer, in fact that is what I have been yapping my mouth about for several pages of this thread. So go back and read again.

Oh no worries about having fun digging bullets--it's a "blast" to say the least!

Michael

<http://www.b-mriflesandcartridges.com/default.html>

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



accit  
One of Us

posted 27 November 2009 18:37

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quote:

Originally posted by ALF:



Lets see now we have a 500 gr Woodleigh, we have a 500 gr "Miracle bullet" and we have just for fun two solids, one a 500 gr Monometal RN Solid and lastly to please Gerard a theoretical 500 gr GSC FN. ( all are 458 cal)

All impact the target at the same velocity, say 2250 fps ( 5619 ft pounds) all come to a dead stop in a huge theoretical buffalo.

Ok Alf I'll attempt the answer, purely because I want to know the real answer, and it's not forthcoming.

1. Who of the above dumped the most energy in the buffalo ??????  
All the same.( 5619 ft pounds)

2. So having witnessed the effects of massive energy dump I can but ask the following ?

of the 4 bullets above, who does the most damage? ie who is likely the most lethal?

- #1 Woodleigh - biggest wound channel due to expanded diameter.
- #2 Miracle bullet - big wound channel up until petals are shed.
- #3 FN GSC - Best penetration but least damage in the vitals due to expanded (or lack thereof) diameter
- #4 RN Solid - Who uses this, probably close to the FN result, don't really know.

3. Who penetrates the deepest, theoretically ?

FN GSC - Best penetration due to energy being shed later as a direct result from slight expansion diameter.

4. Is it possible to have a huge energy transfer given the above 4 choices and still penetrate the deepest ? ( careful now because when impacting all of the above do so with just 5619 foot pounds of energy ( no new energy is added to the bullet, energy is only lost! ) ?

All energy is transferred for all bullets due to no exit.

5. If a bullets sheds its foreparts as in the much touted now "miracle bullet" does it do more or less damage in total than say the solid FN that sheds no parts and stays intact and part b of this question in the scenario 5 in real life does the remaining shank of the mircale bullets still penetrate as deep as the FN bullet?

No, the shedding of petals required more energy than the FN thus less penetration, but the initial wound channel should be bigger and I assume shedding happens close to the vitals or after.

How did I do??

Posts: **42** | Location: **RSA, Pretoria** | Registered: **14 October 2008**



Robgunbuilder  
one of us



posted 27 November 2009 20:14

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FWIW- I have had very good results with annealing just the front half of my .600OK Copper bore riders while leaving the back of the bullet harder. The bullets partiall mushroom at high impact velocity but stays together for deep penetration.

Macifej- I'm just a poor struggling gun nut swimin upstream in a river of BS.-Rob

Never underestimate the power of stupid people in large numbers to do incredibly stupid things- AH (1941)- Harry Reid (aka Smeagle) 2012

Nothing Up my sleeves but never without a plan and never ever without a surprise!

Posts: **6314** | Location: **Las Vegas,NV** | Registered: **10 January 2001**



jwp475  
One of Us



posted 28 November 2009 05:14

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<http://hyperphysics.phy-astr.g...Hbase/colcon.html#c1>

A 9mm may expand to a larger diameter, but a 45 ain't going to shrink

Men occasionally stumble over the truth, but most of them pick themselves up and hurry off as if nothing had happened.  
- Winston Churchill

Posts: 5077 | Location: USA | Registered: 11 March 2005



capward  
One of Us



posted 28 November 2009 05:21

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I'll apologize up front if this comes out pissy, it's definitely not intended. I spent 6.5hrs yesterday being bounced around in an SUV being driven by my 16 year old granddaughter so the body is a bit sore at the moment and brain is a bit tired.

I enjoy reading of Michael's test results and very much appreciate the time he takes to both perform the testing but to also report the results for our consumption. I perceive that bullets that will track straight during his bullet testing will also track straight in game and DG animals. I also perceive that there is a relationship to NONCON performance in Michael's testing and their use against game and DG animals.

Twist rate, I personally believe that the "traditional" twist rates for rifle calibers were designed for non-bonded C&C bullets and that when using modern monometal bullets that faster twist rates will deliver better bullet performance. I'm not an expert...have no PHD...just how I feel. Feel free to disagree.

**Alf...**I perceive that you believe Michael's testing to have zero-to almost zero relationship to the real world of killing game. 10-4...got it...I understand...enough said. And I agree...I know nothing about twist rate and bullet stability, etc.

**Michael...**I thought I'd remembered you mentioning that you had trouble maintaining straight penetration with the NONCONs in your 500 MDM when using an 18" twist rate barrel which was eliminated when you moved to a 12" twist rate. I notice that your threads are each in the multi-thousands of views so thought I'd pose the question regarding the 416 B&M with its slower twist rate and failure to maintain straight penetration in case I was wrong...or if correct that others might have missed it. Keep up the good work, obviously many of us appreciate your efforts and enjoy reading your posts.

Jim   
"Life's hard; it's harder if you're stupid"  
John Wayne

Posts: 4954 | Location: Central Texas | Registered: 15 September 2007



michael458  
One of Us



posted 28 November 2009 05:31

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quote:


Michael...I thought I'd remembered you mentioning that you had trouble maintaining straight penetration with the NONCONs in your 500 MDM when using an 18" twist rate barrel which was eliminated when you moved to a 12" twist rate. I notice that your threads are each in the multi-thousands of views so thought I'd pose the question regarding the 416 B&M with its slower twist rate and failure to maintain straight penetration in case I was wrong...or if correct that others might have missed it. Keep up the good work, obviously many of us appreciate your efforts and enjoy reading your posts

Jim

When I first started trying to get a RN solid to stay in the box that is when I changed the twist rate on the .500s to 1:12. It was for the solids only. It improved the RN solid substantially. Later I found that the Flat Nose bullets would stabilize in the 1:18 twist barrels for 90-95% of penetration. THIS IS Stabilization DURING TERMINAL PENETRATION---not flying thru the air accuracy.

As for the NONCON bullets, I don't really think I have tried the .500s in the old 1:18 twist. Might do that for giggles if I can remember.

I also agree with your thoughts concerning the 416---I concur that with 1:12 I believe the NONCON would be stable to 100% of it's penetration, instead of 90-95% currently with 1:14. It does make a difference. As you see the .500s all are 100% dead straight penetration after shearing petals, brass or copper, makes no difference, all found nose forward also. Forget everything else--you are 100% correct--I am 100% correct.

Thanks jwp--but I just as soon you told me what it was all about, I will believe you!   
Michael

<http://www.b-mriflesandcartridges.com/default.html>

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



capoward  
One of Us



posted 28 November 2009 06:03

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Michael,

Yes I now remember, the 18" twist rate related to the SST RN solids before you transitioned to the SST FN solids. My bad.

Jim 🤖  
"Life's hard; it's harder if you're stupid"  
John Wayne

Posts: **4954** | Location: **Central Texas** | Registered: **15 September 2007**



michael458  
One of Us



posted 28 November 2009 16:31

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BwanaDave

A long time ago I tested some of the Hawks, 400 gr 45/70. At lower velocity 1750 fps they did rather well. Still very soft. I suspect at higher velocity 2000 fps or so they will shed jackets, and turn inside out on themselves. So beware what you shoot. Deer, I would think it would be just fine, but still would not take any rear raking shots!



**45/70**  
**400 Hawk .025 Jacket**  
**Impact Velocity 1750 fps**  
**Retained 395-394**



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My record keeping was not so good 10 yrs ago, I have become much better at keeping better numbers on these things over the years.

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



**michael458**  
One of Us

<http://www.h-riflesandcartridges.com/default.html>

posted 28 November 2009 16:36

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The New Word is "Non-Conventional", add "Conventional" to the Endangered Species List!  
Some other 45/70 tests from many years ago. .

**45/70**  
**430 TrueShot**  
**Velocity ??**  
**28 inches Total Penetration**  
**Retained 335-321**



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**45/70**  
**350 Kodiak**  
**Muzzle Velocity 1911 fps**  
**50 yd Impact Velocity 1708 fps**  
**Retained 327 grs**



**45/70**  
**400 Barnes Original**  
**Muzzle Velocity 1754 fps**  
**Impact 50 yds**  
**Retained 386-388**



**45/70**  
**400 Kodiak**  
**Muzzle Velocity 1678 fps**  
**Impact 50 yds**  
**Retained 359-366**



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**45/70**  
**300 Barnes X**  
**Muzzle Velocity 1981 fps**



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**45/70**  
**420 NorthStar**  
**Muzzle Velocity 1819 fps**  
**Retained 417-415-418**



My personal favorite 45/70 expanding bullet with extreme consistency--405 Woodleigh

**45/70**  
**405 Woodleigh**  
**Muzzle Velocity 1834 fps**  
**50 Yd Impact**  
**Retained 398-398-397**



Michael


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**Bwana\_Dave**  
One of Us

 posted 28 November 2009 20:01


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Michael,  
  
Thank you so much for those photos. They are great info.  
  
Use a double rifle. It just feels better.  
  
Double Rifle Shooters Society

Posts: **190** | Location: **Somewhere, I think.** | Registered: **20 June 2009**




**RIP**  
one of us

 posted 29 November 2009 03:51

[Hide Post](#)


Yep,  
I need some 405-grain Woodleighs for my 45-70.

DRG says: "Kiss my liberal grits!" 

Posts: **28032** | Location: **KY** | Registered: **09 December 2001**



**michael458**  
One of Us

 posted 08 December 2009 23:44

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I'm Back!

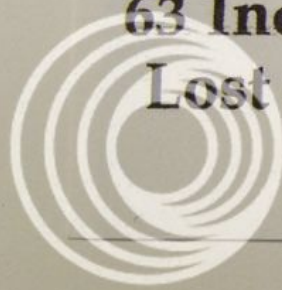
Hey Guys, finally back up and running this week! Beginning to catch up a bit and get some shooting done. Today was Solid Day! First time using the second box to catch those big flat meplat bullets. Only a couple got all the way thru today however!



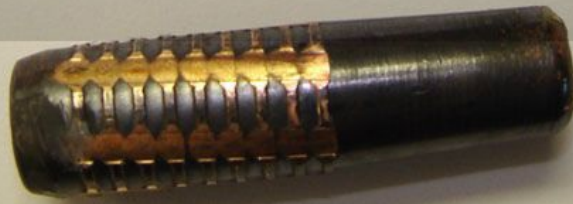


Today I worked with the 416 caliber 410 gr GS Custom bullets that Buffalo was so kind to send, and I promised to give them a go at high velocity and low velocity. For the high I only had 416 Rigby to work with, which worked out just fine. For the low velocity I used a starter load in the 416 B&M, which also did fine, giving a difference of a tad over 400 fps. Results below.

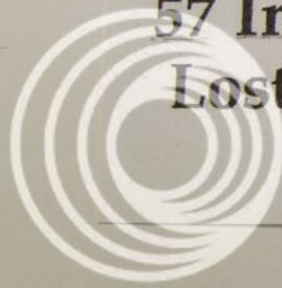
**416 Rigby**  
**410 GS Custom Solid**  
**Impact Velocity 2527 fps**  
**63 Inches Total Penetration**  
**Lost Stability at 60 inches**



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**416 B&M**  
**410 GS Custom Solid**  
**Impact Velocity 2108 fps**  
**57 Inches Total Penetration**  
**Lost Stability at 55 Inches**



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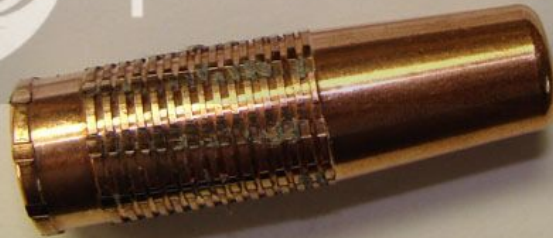


Next in 416 Caliber I have some 370 North Fork Solids. This fell pretty much in line with what I have tested with the 350 Barnes FN Solid in the past. No big surprises here.

**416 B&M  
370 North Fork Solid  
Impact Velocity 2375 fps  
53 Inches Total Penetration  
Lost Stability at 51 Inches**

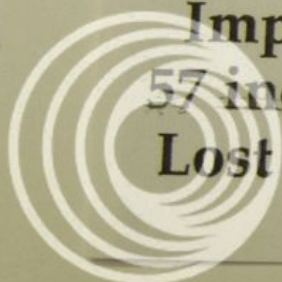


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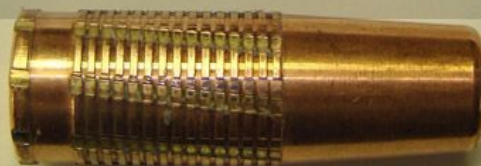


Then in 458 Caliber some 450 gr North Forks. Exactly the same amount of penetration as the 450 Barnes FN Solids, or banded solids.

**458 B&M  
450 North Fork Solid  
Impact Velocity 2212 fps  
57 inches Total Penetration  
Lost Stability at 53 Inches**



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And since these have traditionally gone thru box one and out, the 500 MDM and the 550 gr SSK Solids. They penetrate the first box, but not too far into the second!

**500 MDM  
550 gr SSK Solid  
Impact Velocity 2205 fps  
65 Inches Total Penetration  
Lost Stability at 63 Inches**



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If you look at today's test work you see all the bullets lost stability once they had nearly come to the end of penetration. This is something I have not experienced before with any of the FN Solids I have worked with in the past. Almost all the time they are all found nose forward in the mix. Well I suspect the big difference today is that I pulled the boxes up to the chronograph, all impacts were at 17 FEET--not 20-22 yards as I normally do. So all impacts are nearly right out of the muzzle. Now someone tell me, is it possible that the bullet has not fully stabilized at this point yet??? If impact distance is increased to say 20 yards stabilization is probably a bit better? Need some professional opinions on this please.

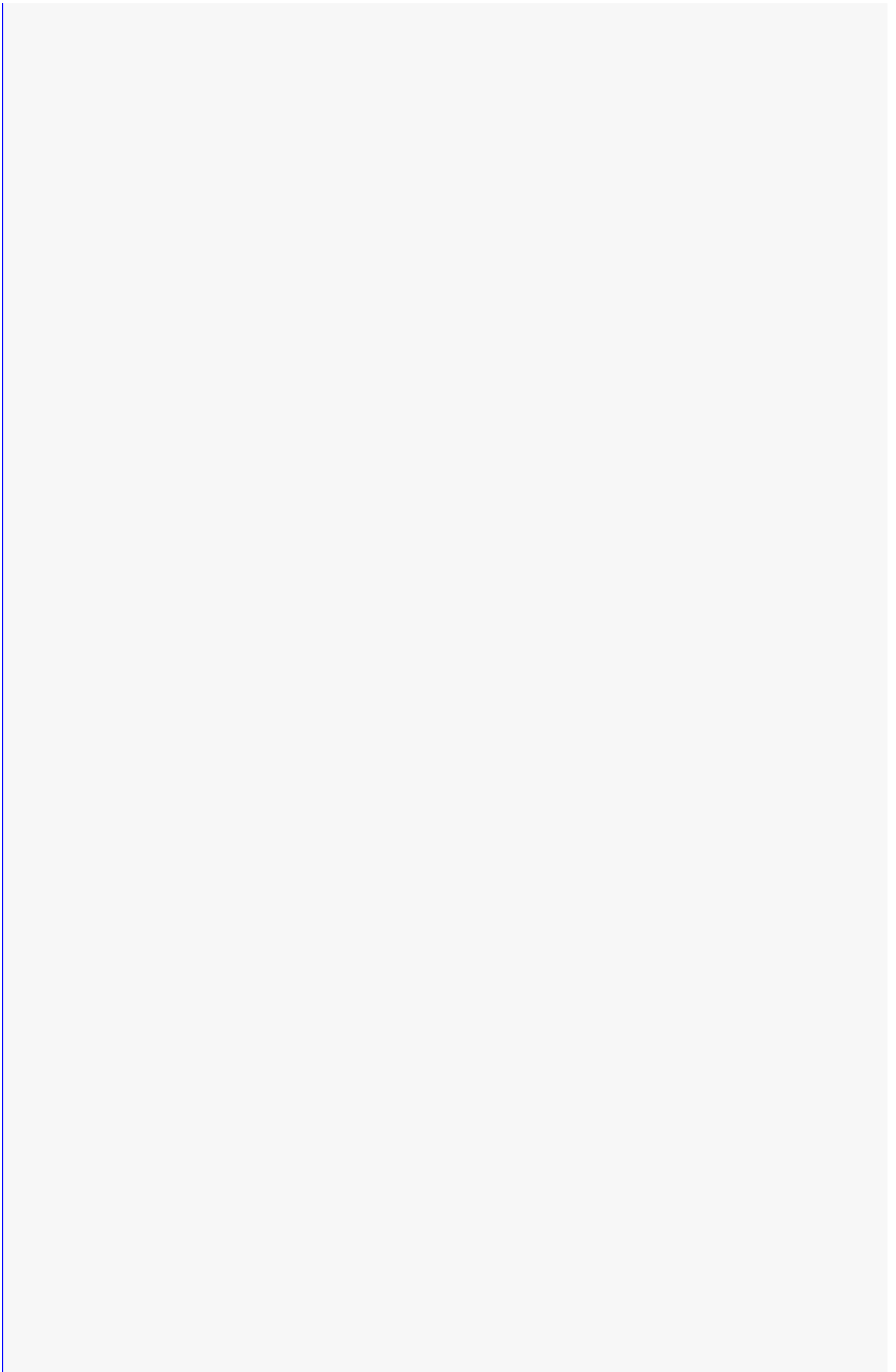
Now regardless thereof, this is pretty much worst case scenario in the field, having to shoot at feet, not yards. All the bullets stayed dead straight until that last couple of inches, 95% or better of the total penetration. Also anytime you pass that 35-40 inch area in this mix you are plenty adequate for anything you would do with a solid. And all of these are well past that mark.

Michael

<http://www.b-mriflesandcartridges.com/default.html>

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



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