

This topic can be found at:

<https://forums accuratereloading.com/eve/forums/a/tpc/f/4711043/m/2861098911>

capoward

16 January 2010, 04:11

### Terminal Bullet Performance

☹️ Ok...now the two of you already need a third-party translator, from "Texas" no less, so that you can have an understandable conversation...and you guys want to do with bottles of sake in hand! 😊

☹️ I can see it now, like a rerun of the Three Stooges' "Who's on First" routine! Tickets please!!! 😊

Jim 🗨️

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

michael458

16 January 2010, 19:36

465HH

Oh I may carry on sometimes, but in all honesty I really am not much of a drinker. Now from time to time I will dip into my Grey Goose, or several other brands of Vodka. I do love the Sake however in addition. Last night was no exception, I consumed a large one, then decided I needed a medium to keep things moving in the right direction. Well, I really didn't need that second medium size bottle full! Anyway, all is well today and feeling pretty good!

Jim

Last night even a "Texas Translator" would not have understood a word I said! 465HH would have thought for sure I was speaking who knows what? Yeah, it would be a show for sure!

I also came in to shut down computers last night! I saw these two posts above, and I did type something out, or at least I think I did. I type pretty well, but my fingers could not get in the right position last night! I said something to you guys, but I don't know what. This morning I deleted the post!

☹️ I could not even figure it out. Surely no one tried to read that I hope!

Michael

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

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Live Outside The Box of "Conventional Wisdom"

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michael458

16 January 2010, 19:44

416Tanzan

I will try and figure something out to get the tests done and close to the velocity you request. I suppose I really should try and put most of them thru one of the 338 WMs which is what you have. I will most likely do both 338 WM and 338 Ultra. We might just run a full 338 caliber test. I have enough material to do it. And a good full 338-358 test has been on schedule for a long time. It's just that I knew I was not getting ready to take either to the field anytime soon, and still not scheduled, probably still be a long time before ever doing so again, if ever, who knows? With the 9.3 B&M and 416 B&M taking care of my medium bore needs in the future, there really is no need for me to worry too much about 338-358, so they have been on the back burner. But I will change that starting this week. I have lot's of other 338 caliber bullets to work with too, so we will get started come Monday I think.

Michael

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capoward

16 January 2010, 21:23

quote:

Last night even a "Texas Translator" would not have understood a word I said! 465HH would have thought for sure I was speaking who knows what? Yeah, it would be a show for sure!

I also came in to shut down computers last night! I saw these two posts above, and I did type something out, or at least I think I did. I type pretty well, but my fingers could not get in the right position last night! I said something to you guys, but I don't know what. This morning I deleted the post! ☹️ I could not even figure it out. Surely no one tried to read that I hope!

Michael

☹️ Ya shouldn't have deleted the post! 🗨️

I read it last night and thought everyone would have truly enjoyed it today. I have to admit that I did get a good laugh out of it especially as I was thinking about throwing a Japanese server into the mix with you, 465H&H and the "Texas Translator" and wondering who in the restaurant would try to translate that four-way conversation!!! 😊 And I believe I understood 'bout 98-99% of it which I also thought was kinda scary! 🤖

Jim 🗨️

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

quote:

Surely no one tried to read that I hope!

Don't worry about it. We understood it was sake night.



Glenn

**RIP**

Just marking time until Michael sobers up enough to do some more testing for our edification. He does need a little R&R now and then from all that good hard work.

quote:

Originally posted by Extremist458:  
RIP, Now you are speaking my language! Knob Creek?

Am building my Pa's bar currently, and I think it will be finished before his kitchen! Marble and HD cabinets, but small. But the house is a converted horse barn, so it all suits nicely. He's the Gray Goose Guy here.

Extremist458,  
You are right, Knob Creek is the best, and the official toast of the "Machinegun Shoot."  
Now I have to admit that Buffalo Trace may be second rate at 90 proof instead of 100 proof, but it will do.

As for the Grey Goose, that is best slipped into the OJ of yer wimmin.  
If you want some "sippin' vodka" nothin' beats Crystal Head.

I have no bar, just like to stash the bottles amongst the book shelves.





My first bullet trap was converted to a bullet shelf, after one shot loosened the screws in the 2x4s and 2x6s. Bullets are stashed in stacks of totes too:





All 12 issues of COTW.  
You can track the appearance and disappearance of reference to the .395-caliber there:



I have two rooms and half a two car garage full of books, bullets, brass, stacked and shelved, wall-to-wall, and floor to ceiling in some spots. It ain't pretty, but I know where everything is, as long as I stay away from the Knob Creek.

Most of the world supply of .395 bullets is stashed in the lower back corner of one of my shelves:





The spirits of Crazy Horse and Mato Sapa guard the entrances to my combination library-reloading rooms, they bless my mess, and that is as close as I get to neat or pretty in my abode, IMHO (In My Hillbilly Opinion):



Who says Crazy Horse did not carry a .395-baller flintlock, like Davy Crockett's "Old Betsey," but maybe shorter barreled for horseback?  
He sure didn't have a Winchester Model 1894 Commemorative like used to reside on that display board.



**CHIEF CRAZY HORSE**

Chief Crazy Horse (1849-1877) was a Lakota orator and warrior who led the band of warriors known as the Minutemen. He was the only Native American to have been depicted on the Great Seal of the United States. He was also the only Native American to have been depicted on the Great Seal of the United States.

**Why do Indians Chase Crazy Horse for the Mountain Carving?**

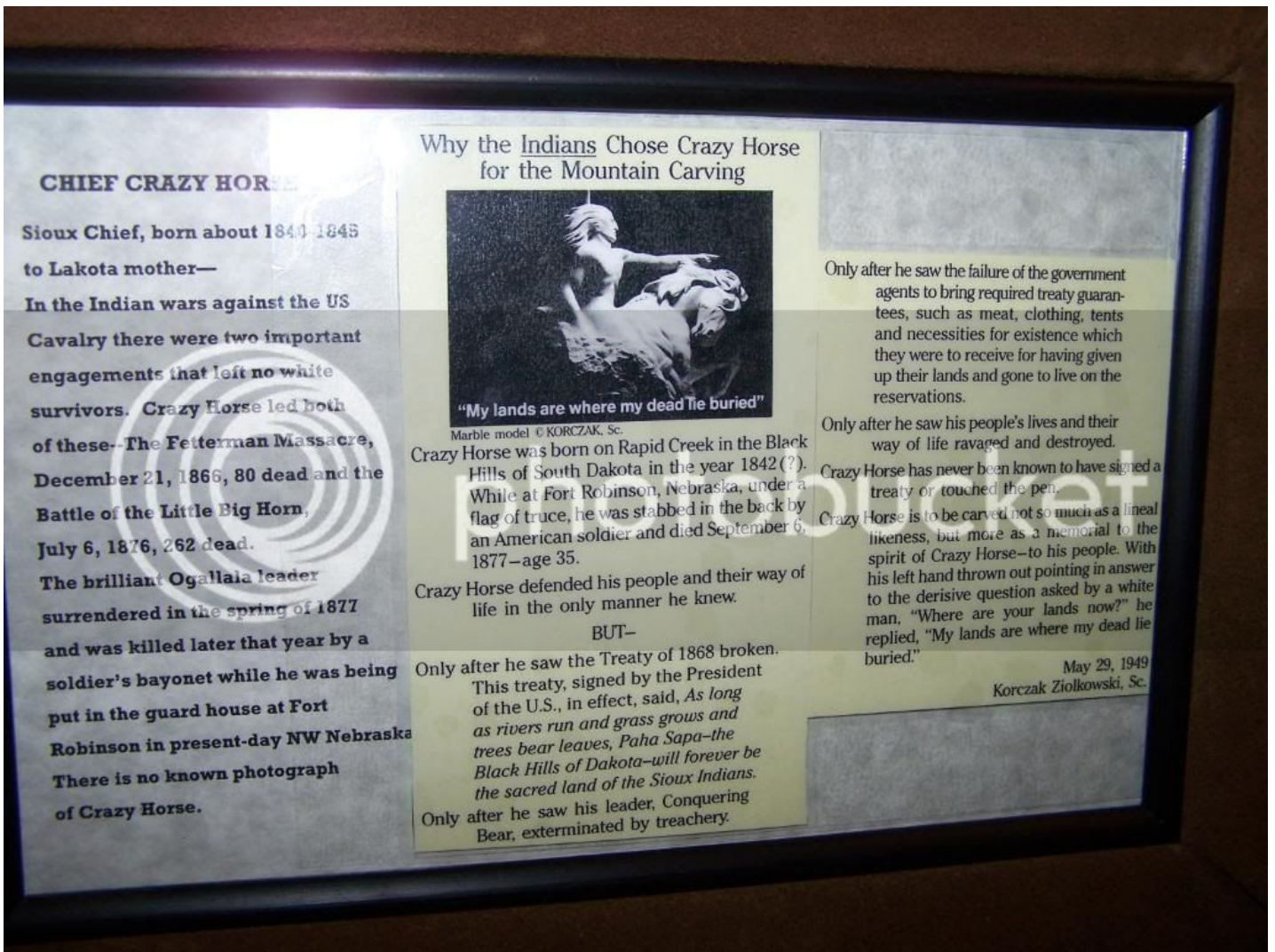


The Indians believe that the horse is the spirit of Crazy Horse. They believe that the horse is the spirit of Crazy Horse. They believe that the horse is the spirit of Crazy Horse.

After the war the Indians of the great west were being moved to reservations. They were being moved to reservations. They were being moved to reservations. They were being moved to reservations.

May 23, 1944  
Kurtis D. Johnson





DRG says: "Kiss my liberal grits!" 🤪

**someoldguy**

17 January 2010, 07:55

Michael and RIP, you have such great places!

About all I could show a picture of is a box of .45 Colt ammo that's resting in my sock drawer.



Glenn

**RIP**

17 January 2010, 08:01

someoldguy,

HA! You like the Bourbon on the bookshelf, eh? 🍷🍷🍷

**someoldguy**

17 January 2010, 14:15

quote:

HA! You like the Bourbon on the bookshelf, eh?

Sure! I'm old enough. 😊

But you probably don't want to know what's in my underwear drawer. 🤪



Glenn

**michael458**

17 January 2010, 15:53

RIP

Wonderful! I will have to try the Crystal Head! My bar has not been stocked in so long I can't remember the last time.

Well, partys almost over I reckon. Time to get back to work. Trying to get started shooting again this week, working my schedule out and hope to be shooting by mid morning Monday!

Yesterday I started sorting out the loads for the 338 tests. Will be using both 338 Winchester and the Ultra. I have no experience with bullets below 200 grs with either cartridge, so Tuesday when the light 185s and 160s come in will have to do just a little dab of development in both cartridges for those. Most other bullets from 200 up I have loads for already of course. I am going to carry 338 beyond Tanzans requests with several bullets, and at at least a couple different velocities with each.

I also have some work to do before tests also. I plan to test the 338s with 50 yard impacts and collecting downrange impact velocity, have to mount a scope on one of the 338 Winchesters, and also on one of the 458 Lotts brought out of retirement. Will test the 458s at 22 yds, also collecting impact velocity. Will probably mount scopes today, shoot in the morning. So it is going to be a big week this week with the tests. Keep an eye out, starting probably by Monday afternoon I can start posting results.

Michael

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**416Tanzan**

**17 January 2010, 17:27**

It's an honorable contribution you are making.

Besides the light bullet results,  
I will be interested to know if and at what velocity you can shear off the 225 TTSXs, along with resultant penetrations.

+ + + + + + + +

"A well-rounded hunting battery might include:  
500 AccRel Nyati, 416 Rigby or 416 Ruger, 375Ruger or 338WM, 308 or 270, 243, 223" --  
Conserving creation, hunting the harvest.

**michael458**

**17 January 2010, 17:41**

Tanzan

I am on it. We will find out much this week I think!

Probably be Tuesday before I can get started on 338 stuff. I plan to shoot the solids tomorrow, and get started loading the 338s in the afternoon, and posting solid results. Tuesday start shooting 338, which will take at least a couple of days if not more.

Michael

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**416Tanzan**

**17 January 2010, 18:06**

Wish I were there, but we are have our callings. Enjoy the process for all of us.  
yes, I expect to learn much this week.

+ + + + + + + +

"A well-rounded hunting battery might include:  
500 AccRel Nyati, 416 Rigby or 416 Ruger, 375Ruger or 338WM, 308 or 270, 243, 223" --  
Conserving creation, hunting the harvest.

**buffalo**

**17 January 2010, 18:38**

quote:

Originally posted by 416Tanzan:  
Wish I were there, but we are have our callings. Enjoy the process for all of us.

Could not agree more.....

**someoldguy**

**19 January 2010, 00:00**

I know it involves "cyphering," but I thought I would share something that may be of interest to some of you. So bear with me, or roll your eyes and go on to the next post.

I learned a concept on this page that I thought was interesting: Momentum density.

<http://www.grosswildjagd.de/penetr2.htm>

(I don't know how the hell the author came up with those "Penetration Index" numbers. They have nothing to do with the definition he gave. Possibly it's in metric units.)

Momentum density is defined as the momentum divided by the surface area of the penetrating bullet.

And guess what? All this means is the velocity times the dynamic sectional density, that ALF has shown.

Since we're concerned with meplats, we simply substitute the meplat diameter into the classic sectional density formula instead of the nominal bullet

diameter because it's the meplat diameter which is considered the penetrating area.

Here are the momentum densities of the bullets from ALF's chart for which meplats are given. (I rounded these off to a whole number because it's only an approximation. And besides who's really going to care anyway?)

Superpenetrator .458 500 .911 x 2155 = 1963  
Superpenetrator .416 410 .752 x 2310 = 1737  
Woodleigh HSS .458 400 .506 x 2312 = 1170  
Northfork .458 450 .652 x 2212 = 1442  
Barnes .458 450 .669 x 2169 = 1451  
SSK .499 550 .641 x 2205 = 1413

Notice a trend?

It turns out that if you divide the momentum densities above by a constant within the narrow range of about 21/22 to 27, you will get approximately the penetration in inches that Michael got from his tests. (There are a couple of anomalous ones: One the factor is about 65 and the other the factor is about 35. Another one, since it tumbled, will be hard to say. Otherwise, it's pretty regular.)

Anyway, I just thought I'd share that.

Good luck with the tests, Michael, and enjoy!

PS: I didn't post the original penetration numbers because I'm too lazy and didn't want to go to a lot of extra trouble for bupkus.

---

Glenn

**michael458**

**19 January 2010, 00:28**

Hey Glen

"cyphering" again I see. Well looks interesting and I even understand it, a little anyway.

Still I will leave the "cyphering" to you and Alf, both whom are far more qualified than I to do so.

Thanks, Now on to other matters I suppose.

Michael

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**ALF**

**19 January 2010, 01:08**

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**michael458**

**19 January 2010, 01:14**

There will be NO JOY in the Round Nose Camp Tonight!

I did manage to get some test work in today. Just to give you guys an idea I started at around 9 am this morning, finishing the actual shooting at 2:30 pm. Now I did have to sight in the 458 Lott, added a scope for it this morning, so that took a few minutes, I think 3 rds fired total. Then I did take a 20 minute lunch in between too. Oh, I fired only 5 test rounds! So it takes some time, especially with solids. If done correctly one cannot rush these things, it takes what time it does.

Now, moving forward. Below you will see the test rifle, Winchester M70 458 Lott. It has been retired since 2004! I am proud to report that 458 Lott does not have any recoil! I can only assume most of the things I have been shooting since 2005 must have more recoil, as this particular rifle does not have any recoil at all! Like shooting a 22!





Test work today had an impact at 21 yds from the muzzle. I tried to get up front velocity and impact velocity, but I was experiencing technical difficulties with the up front chronograph. Later determined to be a problem with the screens and not the chrono. I did manage to get the all important impact velocity each and every time however. I replaced the screens for the up front chronograph and it is working like a charm now. Need a replacement set I think now.



I have no joy for 465HH and the 550 Woodleigh FMJ. However, before we get there I do believe that a large part of this issue may be twist rate for the 550. I do NOT know what the twist rate is for Winchester M70s in 458 Lott. I suspect 1:14. If anyone knows for sure, please say so. I do know for a fact that a round nose bullet is very dependent upon proper twist rates, or faster twist rates. I suspect 1:10 to 1:12 would have been much better for this bullet. And would be better for even a 500 Round Nose too, in my opinion. I had actually planned to put the bullet thru much more than just one

round, but after this performance decided it really was a waste of energy, and time to do so. It would not have changed, I am very sure.



465HH, do you know the twist rate in the barrel you are shooting these in? I did suspect that we would have done better with this bullet.

As we all know, this medium is particularly hard on Round Nose solids. I do not deny this fact.

This test may not be entirely fair to a round nose profile. I freely admit, and agree, that a round nose bullet does better in the field, than these tests indicate. However, so does the various Flat Nose bullets, they too perform better in the field than these tests, by my estimates 30-35% better. So the medium is tough on bullets, that is no doubt. Is it an unfair test--between two bullets? Would it be fair to try and find a less dense, easier test let's say, so that a round nose design can succeed? I think it is not fair to do so! Would it be fair to the vast majority of average or better than average students, to lower the standards so that those below average, can now be average? I think not!

Yes, I know I know, the old tried and true Round Nose has worked a 100 yrs and will continue to do so. However the potential for better is being presented to us by every single major bullet manufacturer in the bullet making business, there has to be a reason for that. Use and continue to use the round nose fmj if you so desire, I am sure it will continue to do well for you. But should you decide you want a little more, a bullet with better potential straight line penetration over the long ride, then that is up to you too. This is why there are choices, and we can make our own. Test or no test, I made my choice to go with a flat nose profile and I have seen, heard, learned, nothing at all to show me otherwise.

I do want to make a couple of points, or discuss a couple of issues. 465HH and I, between translators and shots of Sake discussed a couple of things concerning the tests and one issue in the field I would like to address, while we are here with the 550 Woodleigh. First, 465HH mentioned that possible bunching of the paper was pushing the RN up, since I have several that turn upwards and out. Well, no bunching that I could define, and this one turned down. The other test a few months ago with the 500 Gr RN Woodleigh, turned to the left in the box. I have had others turn right and go thru the right side of the box. ?????? Don't know?





Lot's of good bearing surface on the bullet, lot's of engraving. Just not sure the twist was actually fast enough to stabilize it during penetration.

One other thing 465HH and I had a discussion about was charging elephants and that he felt like the 550 Woodleigh was a good bullet for that sort of thing, in particular a near miss to the brain, effecting turning the elephant because of impact. Currently today, 465 HH has exactly at least twice as much experience as I do in these matters! And has in fact done so, on two occasions as I understand. Preferring the 550 over a 500 gr bullet, just in case. Well I happen to think maybe otherwise, having put some thought into the issue. Especially after clearing my mind the other night, washing all the unclean spirits out with plenty of Sake! I have shot a few critters with the FN solids, and quite a few with RN solids, without any doubt at all in seeing and watching reactions of these critters, the Flat Nose bullet wins every single time in the "hit'em harder" department. That Flat meplat just hits and transfers more trauma than what a round nose can do. In my opinion of course, I think and believe a flat meplat would impart more trauma, on a near brain miss on an elephant than what a round nose can impart? I might be wrong, but that's where I would put my money! Of course no two elephants or any other critter are created equal, so one would have to study several before forming any sort of opinion on such! And of course this sort of discussion belongs elsewhere I suppose, and not really on this thread. Just a thought in passing, and while discussing this particular bullet, and our actual conversation of late.

I have more to report, but I really need to take a short break from this for a few minutes.  
I will return!  
Michael

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**416Tanzan**

**19 January 2010, 01:37**

twist rate is easy to measure.  
take a cleaning rod, put a reasonably tight wad of cloth or TP in the muzzle,  
CAREFULLY push the wad into and down the barrel,  
(with fingers or a plastic bushing holding the rod in the center of the muzzle, not touching the barrel)  
mark the rod with anything so that you can see where one revolution of the rod occurs and how  
far the rod moved while completing one rev. Practically, measurements do not not to be any more accurate than a 1/4". You can treat 13 3/4" as 14".

+ + + + +

"A well-rounded hunting battery might include:  
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Conserving creation, hunting the harvest.

**michael458**

**19 January 2010, 01:44**

quote:

At least someone is paying attention

Aif!



I am hurt! I can't believe you think I was not paying attention! My paying attention is the least of the issue!

Anyway, in case you missed my above comments concerning your bar and other photos! Excellent Very Very Excellent. Love the bar, very typical RSA decor? Maybe next time I am in town we have a drink? Of course if any of you guys are ever ever close to my neck of the woods, I do expect you to touch base with me, we will have a drink, on me of course!

M

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**michael458**

**19 January 2010, 01:49**

Next!

500 gr Nosler FN Solid!

Not much to say here, a photo and the label pretty much say it all. Now with the added box I am beginning to see that some of these deep divers that go past 60 inches do loose stability right at the end of penetration. Regardless, it makes little difference. This one veered slightly to the right from 62 inches to an end at a total of 65 inches, I only give it 62 inches straight.





As you can see from the bottom photo, it was headed to the right.

Very much similar in penetration to the 500 Barnes Banded that have been tested. Not much difference, if any.

Michael

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**michael458**

**19 January 2010, 01:55**

500 gr Rhino!

The Rhino did very well, 58 inches straight before starting UP. And it gradually went up and up and up, until it finally exited the box, going thru the 70 inch witness card, but not far from the top. It actually had a free ride from about 64 inches until it left the box all together. Free ride, meaning it was riding the top of the box, not really penetrating anything.

**458 Lott  
500 Rhino FN Solid  
21 yd Impact 2198 fps  
58" Straight Line Penetration  
Turned off Course at 58" Upward  
Out the Top of the box 70"  
Free Ride from 64" of Penetration  
Top of the Medium**



Boy, did it go up! I will try and show you how far it went up and where I found it in relation to the box. But it was almost straight in the wood in the top of the range, at an upward angle of course. LOL!





Bullet Impact



photobucket

DAVID & ASSOCIATES FREE CONSULTATION  
INJURY ATTORNEYS 910-754-7246



Michael

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**416Tanzan**

**19 January 2010, 02:01**

excellent stuff

+ + + + +

"A well-rounded hunting battery might include:  
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Conserving creation, hunting the harvest.

**michael458**

**19 January 2010, 02:21**

Now for fun things! Sorry, I hate testing solids, lot's of work and no room for errors! Tedious you might say, and time consuming.

Since I had the Lott in place, 465HH sent a couple of 500 gr Nosler Partitions! Very excellent results, and in my opinion a good buffalo bullet!



458 Lott  
500 Nosler Partition  
21 yd Impact 2211 fps  
19 Inches Total Penetration  
Retained Weight 465 grs



photobucket



458 Lott  
500 Nosler Partition  
21 yd Impact 2211 fps  
19 Inches Total Penetration  
Retained Weight 465 grs



photobucket



This bullet did a tremendous amount of damage to the medium from about 3-12 inches of penetration.

Sorry if the photos are a bit fuzzy, was in a hurry to get posted and took what I had.  
Michael

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Michael458

19 January 2010, 02:28

Again, had some 550 gr Woodleigh Softs loaded to sight in for the 550 FMJ.



Did not do near the damage to the medium as what the Nosler did. Could be a velocity transfer I suppose too. Lot's of expansion as you see. Penetration good, but have seen 500 Swifts do much better. 500 Woodleigh soft is only a couple of inches behind this, and I have used it on buffalo a few times with good success. For my part, think I will stay with the 500s for buffalo.

That's it for today's tests! I have not had time as I hoped to get to load any 338s! However, boxes are renewed, soaking overnight, and will be ready first thing in the morning. I have little or no work for tomorrow so I load 338s in the morning and start shooting. Waiting on the delivery from Midway

which should be delivered tomorrow.

Another note; 2000 Non Con bullets shipped today! 4 different bullets, all tested right here recently. Now it's time to take them out for a dance!

Tomorrow Gents!

Michael

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**I Bin Therbefor**

**19 January 2010, 02:32**

Thanks for the Rhino test. As I promised him, I sent Chris Melgaro, President of Safari Bullets (Rhino importer) the results of the Rhino test and the URL of the thread so he can check in for himself. 😊

**michael458**

**19 January 2010, 03:16**

IBT

I may test the Rhino again just to check it. Tomorrow. Regardless, it did well.

Michael

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**someoldguy**

**19 January 2010, 03:26**

quote:

At least someone is paying attention Wink

Thanks, ALF. Yep, I'm paying attention. 😊

Interesting info. I'm still trying to digest it, but it's still interesting. 😊

Thanks for the tests, Michael.

So I have to conclude that a good use for roundnose bullets is punching holes in paper. I never realized.

---

Glenn

**michael458**

**19 January 2010, 15:25**

Glen

Well, I would not go so far as condemning the RN, I just think overall the FN does better at most things. I normally get into a lot of trouble over this RN/FN discussion. I know myself, that a RN performs better in the field than it does in this test. This is a pretty difficult test for the RN. But as stated, the FN bullets do well in the test, and in the field. I have used a lot of RN bullets, elephant, hippo, and buffalo. All dead! So they were all successful and accomplished the mission at hand. I suppose if one has a rifle that will not feed a good FN one could choose a RN. Personally I would not go to the field with a rifle that would not feed a reasonable FN to begin with. But that is just me.

All proponents of RN FMJ or solids have had success in the field, as far as they can tell. So who am I to say!

I hope no one objects to my posting the 338s here on the thread, being in the big bore section. 416Tanzan has peaked my interest in the project and I look very forward to working on it this week. Getting ready to chew up a lot of paper! Also not sure how many Witness Cards I have left, may have to make some of those this morning. Unless there is some sort of odd issues I will plan to shoot only one of each bullet. Something don't look exactly right, I will do a second one to check. If you guys want a particular bullet checked more, will do so. This is with some of the ones I have some experience with, some of the others I don't, I probably will do two. Such as the Barnes that are on the truck for delivery today. Tried and true and such, one to begin with. We have a lot of bullets to get through. With that said, I must now get started loading and making some extra Witness Cards.

Michael

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**someoldguy**

**19 January 2010, 15:34**

quote:

I have used a lot of RN bullets, elephant, hippo, and buffalo. All dead! So they were all successful and accomplished the mission at hand.

That's what counts!

See, I'm still just a kid at all this. Still learning.



I feels good to be a "kid" at age 57, but I do wish I still had that energy. 😊

---

Glenn

**416Tanzan**

**19 January 2010, 15:52**

[quote]Unless there is some sort of odd issues I will plan to shoot only one of each bullet. Something don't look exactly right, I will do a second one to check. If you guys want a particular bullet checked more, will do so. This is with some of the ones I have some experience with, some of the others I don't, I probably will do two. Such as the Barnes that are on the truck for delivery today. Tried and true and such, one to begin with. /quote]

With the TTSX and TSX's both, there are three big issues.

1. Penetration in comparison to big bores, it will be important to know how far each of the different weights of 338 penetrates. This is important because some of us who hunt with a big bore sometimes find ourselves in the field situation with a little bore in our hands (338).

2. As important, it will be important to know if, when, and where the petals of an 'X' design may lose their petals. For this, a documentation of measured or estimated impact speed is vital. Rathcoombe's data suggested 2700fps as a threshold, but a threshold developed on smaller calibres some time ago. Is 2700fps a threshold for 338 in 2010?

3. Many have accused 'X' type bullets of not-expanding, or not creating a wound channel. What does the wound channel look like at 3-12"? Surely not like the Nosler partition, 500gr, but what then?

3b. It might be good to test a couple of 'TTSX' bullets at 1800 impact speed, an older proposed threshold for no expansion.

This new technology thing raises new questions.

+ + + + +

"A well-rounded hunting battery might include:

500 AccRel Nyati, 416 Rigby or 416 Ruger, 375Ruger or 338WM, 308 or 270, 243, 223" --

Conserving creation, hunting the harvest.

**michael458**

**19 January 2010, 16:26**

Tanzan

I do not think the X will shed petals at 2700 fps. We will see. Maybe, way back when, the materials used to begin with were famous for that, little more brittle than today. But we will see. I will down load some and see what we get too. Penetration and Impact velocity will be measured. I will also work on the solids today too, they are already loaded and waiting.

I have a 210 TSX in stock, so will test it today in the Win Mag and the Ultra.

Michael

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**465H&H**

**19 January 2010, 22:32**

I am going to give my take on these most recent tests, but before I do I have to say that this is in no way a criticism of what michael is doing. In fact I feel just the opposite in that if we realize problems then we can possibly improve the test medium to make it more comparable to field results. That is the whole purpose of testing.

First of all it looks like the current media is very good for comparing penetration and expansion for soft point bullets. It would go too far to compare the amount of penetration seen in the stop box to the amount you would see in game. This media is a tough one for soft points.

It also appears to work very well for comparing a FN solid with another FN solid of different make. It may provide closer but not exact penetration distance to that seen in game than soft points. Michael believes that his media is tougher than game but I would submit that in one area it may not be as tough especially where elephant are concerned. None of the recovered FN solids show any sign of the bending that we sometimes see in FN solid bullets recovered from elephants. The Nosler FN solid that he tested came out in pristine condition from his stop box but compare it to the same make of bullets recovered from elephants in the following picture.





Notice that one of the Nosler solids is almost bent in half. It doesn't show well in this picture but two more show definite bend at the cannalure. Obviously these bullets experienced a tougher media through an elephants skull than the one that was tested in the media. Is it possible to add something to the media to make the media tougher and more similar to elephant skulls?

Where we have the biggest problem is with RN solid bullets not performing as well in the media as they do in elephants. Why? I don't know but it is obvious that they do. Here I am only talking about RN steel jacketed solids and not Hemispherical RN mono-metal solids such as the A2 and early Barnes solids. Those bullets were known to occasionally veer drastically off course in elephants. RN steel jacket solid such as the early Winchester in the 458 Win, Woodleighs and first generation Hornady steel jacketed solids were known for deep straight line penetration in buffalo and elephants. What we need to test these bullets is a media that isn't easier but more closely mimics there action in game. I don't know what that would be though.

The results of the 550 grain Woodleigh does provide important info to me. I have used this bullet on elephant and can safely say that is the deepest penetrating bullet that I have used. I recovered two from the stomach contents of a large cow and big bodied bull after frontal head shots. That is over 5 feet and maybe six feet of straight line penetration. In my use I have found the FN North Fork solids to penetrate further on frontal shots on elephant that Woodleigh or Hornady DGS solids. My sample size is small though and I hope to rectify that next fall and spring.

Keep up the good work Michael!

465H&H

**michael458**

**20 January 2010, 02:38**

465H&H

You have a pretty good handle overall on the test medium. And for the most part any and all test medium that I am aware of. Nothing will compare hand in hand with animal flesh, time after time. The test medium is far more consistent than animal tissue, and for sure elephant skulls. Animal tissue has many many variables and very rare will two shots be the same in the field.

For soft points and all expanding bullets the test medium, my wet print mix, is excellent in this arena. This is probably for sure where I have the most experience with comparing test bullets with animal tissue bullets. In most cases bullet for bullet they compare nearly exactly from the test medium to animal flesh, factors such as impact velocity, bone on occasion, distance and other factors taken into account. The medium is tougher than animal tissue, no bone as a factor. Penetration in the test medium is always much less than in animal tissue with the expanding bullets. From many bullets being dug out of critters, and out of test medium, one can count on 80%-100% more penetration on average in animal tissue than in the test mix. This has been a consistent percentage over a long list. Factors--Bone-Impact Velocity! Take those into account in the field.

The medium is very excellent for comparison between FN solids. I say tougher, only because once again penetration has been less in the straight medium than in animal tissue. My experience is growing with these, in all sorts of animal tissue, not just elephant. I have not shot enough elephant heads to be an expert by any stretch, only a few, but I do have enough body shots on elephant, buffalo, and other animals to draw some good comparisons in depth of penetration from the medium to animal tissue, I am finding between 30%-35% more penetration in animal tissue than in the test medium. So do the test, add at least 30% for animal tissue. Elephant heads? My .500s are going dead straight thru, but all lost somewhere in the body???? No side brains yet with the FN's. Broadside elephants, complete penetration, from the rear 7 feet of elephant. Buffalo, all total penetration. I have also gathered some field data from other sources with FN solids and all this also points to an increase in penetration of 30%-35%.

As for the bent up FN bullets, I have also seen just as many bent and twisted RN designs too. There is always the potential for any of them to fail I suppose, depending on the material used. As for inserting some difficult material into the mix, yes that can be done easy, and I have done it several times, in particular with some of the bullets I use, you might say an "Ultimate" test. I am sure some will be familiar with this stuff, but a few years ago we built a deck out of what is called "fiberboard". It is not wood, it's a dense, fiberglass, plastic material. It is extremely dense material. One has to drill thru it, or use a screw gun for this stuff. You cannot hammer a nail through it!

On occasion I have taken some of this left over material and placed it 4 inches inside the test medium, on an angle. I have placed 2 pieces on angle for the bullet to penetrate right up front. I have only done this twice, my .500 caliber solids and 500 gr Barnes Banded .458. These both burned through this stuff and continued on their way, dead straight and no loss of overall penetration. No damage to the bullet, no bending, breaking, tuming, nothing. Now is that as tough as an elephant head? I have a complete elephant skull on the range, for a fact there is no bone on the skull that is that dense or thick as 2 pieces of this stuff. But that is only 2 inches of material? I don't know, but that's some mean ass stuff I can tell you! An elephant skull of course is not solid material through and through. I suppose a fellow could insert a fiberboard 2-4 inches in, then some spaced out 2X4 wood pieces, along with the test medium, and do this at some interval about the size of an elephant head, then end with another piece of fiberboard. I would venture to say if a bullet can get through that sort of thing, an elephant head might be a piece of cake? Eh? Maybe?

I was going to put the 550 Woodleigh in some of that, had it done better in the normal medium.

I suppose I will have to test the 9.3 320 gr Woodleigh again with the two boxes to get an overall depth of penetration. Some may know this, I posted it over on mediums with my 9.3 B&M. It very well may be the deepest penetrating bullet I have used or seen. It went through a full 62" of mix, out the 2X6 rear of the box, continued downrange and buried it'self into the concrete block wall---Nose Forward! While it's smaller cousin, the Barnes Banded 286 gr solid, did very very poor, I think about 28 or so inches and out the box! Not near enough meplat on that bullet.

Well the saga I think continues! I doubt that we will have definitive answers concerning RN solids anytime soon. In the meantime I must do what I do and we see what we see!

Thanks and I do look forward to more field work from you 465HH and I will endeavor to do the same!

Michael

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**michael458**

**20 January 2010, 02:56**

Well didn't I promise some 338 work today? I think so! Yes, I have been very very busy. I started out this morning loading the test loads at 6 am! With a few breaks, I have been at it right up to now. I shot from around 9 am until 3 or so, of course did not shoot all that much.

Working with 338 Ultra and 338 Winchester. I have several available bullets being tested, in both cartridges, as follows currently testing 210 Barnes TSX, 210 Nosler Partition, 225 Hornady, 225 Woodleigh, 225 Nosler Accubond, 225 Remington Bonded, 225 Swift A, 250 Nosler Partition, 250 Hornady, 250 Barnes Banded Solids, 250 Swift A, 250 Sierra, and 275 Swift A. Most of these will be tested in both the 338 Ultra and the 338 Winchester. I did a few today, made it thru the 210s, and the 225s in 338 Winchester, only made it thru the 210s in 338 Ultra, and the 250 Barnes Banded Solid.

The rifles used below







338 Ultra

338 Winchester

210 Barnes TSX

Now, there is only a couple of posts for these tonight. The 250 Solids, 210 TSX and 210 Nosler Partition. I would rather hold until I get a bullet from each cartridge for side by side comparisons. Also I did not get my delivery from Midway today?? So no light bullets yet.

Now for the 250 Barnes Banded Solids. Two loads, higher velocity, and lower velocity. You know I had always had a theory that at some point one would reach diminishing returns with high velocity and solid bullets! At some point you would get less penetration, with more velocity. For the most part, in a few tests now, that theory is not showing validity! I had one test with a 416 and 350 Banded that gave more penetration, with less velocity, but now I am getting a few more tests where the higher velocity is getting more penetration! I think now it is about 3 to 1 in favor of velocity, at least in limited tests! This was yet one of those days!



**338 Ultra**  
**250 Barnes Banded Solid**  
**2170 fps Muzzle**  
**46 yd Impact 2022 fps**  
**48 Inches Penetration**

**338 Ultra**  
**250 Barnes Banded Solid**  
**2747 fps Muzzle**  
**46 yd Impact 2545 fps**  
**60 inches Penetration**



At either low or higher velocity, the 250 Barnes Banded 338 caliber bullet really did extremely well! I had little faith in the small diameter Barnes, so I was a little surprised at how well it did to be honest. While it is only 338 caliber, it will get anywhere you need to go if your placement is good! I suppose if a fellow was out in the bush with a 338, in Tanzan land, or thereabouts, would not be a bad idea to stick a few of these in your back pocket!

Michael

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**michael458**

**20 January 2010, 03:12**

I like 338 caliber anything. I have never gone to the field with anything but 250 gr pills, and more so the 275 Swifts. So I was a little disappointed with today's results for penetration of the 210 gr bullets. But we do have a benchmark of sorts, I have heard all my life about some folks shooting elk and being very successful, getting all the penetration they needed with a 210 Nosler Partition. So with that being said, do any of you guys have experience shooting critters with any of these bullets that we are testing, please chime in, we need to know what you experienced in the field with the same bullet!!! This sort of information is needed, once again, to correlate between tests, and tissue! I thought penetration would be a little better with the 210s than what I saw today. Remember, rule of thumb with expanding bullets---add 80%-100% for penetration in animal tissue. Disclaimer; with bullets I have used in the field! I have not used any of these 338s under 250 grs! So I don't know, info would be nice!



**338 Winchester  
210 Nosler Partition  
2917 fps Muzzle  
48 yd Impact 2799 fps  
12 Inches Penetration  
Retained Weight 151 grs**



**338 Ultra  
210 Nosler Partition  
3155 fps Muzzle  
48 yd Impact 3030 fps  
11 Inches Penetration  
Retained Weight 162 grs**



If this trend continues I will begin to wonder why I own a 338 Ultra! With most expanding bullets we already know that velocity is not always your friend. As you can see. With both bullets there was a good wound channel from 3-8 inches or so. Also note, in particular the Barnes, how the higher velocity bullet has the shorter shank, more of a mushroom, and of course less penetration. Note all petals are intact, no shearing effect.

The Noslers did what Noslers do, front peels off leaving the rear to push forward. Good penetration at either velocity, not much difference, an inch!

Michael

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**ALF** 20 January 2010, 03:12

**michael458** 20 January 2010, 05:23

Alf

Yes, it would seem I am a trouble making bastard, from which there is no escape!

Come man, I can't be upsetting the AR Big Bore boys (Of which I am one of) you don't think anyone is really paying any attention to this anyway! Not but about 5 maybe 6 of us on this thread anyway.

However, I must say, never would I advocate small bore for a big bore job! But if one should find oneself wondering around in the bush, with a "Rat Shooter", it might come in handy to have some deep divers in your back pocket, would you agree?

Well, as for the velocity issues, I would agree that deformation might be an issue at those very high velocities. But lacking experience in that area, I will refrain from comment on that. What I will say is this, a good and proper solid at velocities from 2000 fps to 2250 fps, in a proper big bore rifle of 458 caliber + will do any job asked of it! My personal preference has been anything from 2100 to 2250 fps, has always done the job right without fail.

Now for great news, at least for me. The new 500 MDM is on it's way back, after being hit with the new reamer, making some slight changes to the 500 MDM, shorter neck for the most part! Rifle shipped today, will have by Thursday or Friday latest, when I get some new brass made for it, I will post! Yippie! The second rifle following next week! Then followed by 3 more rifles!

Not sure what Wednesday will bring just yet, but have all intentions of another shooting day, or at least getting a few done anyway! Later guys!

Michael

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**Macifej** 20 January 2010, 07:10

Gee Michael ... ya shoulda sent a smoke signal or something re: requests for .338" FN's. RIP tested ours in his IWBB and it was also used rather effectively on a quadruped as shown here:

□

**RIP** 20 January 2010, 09:13

Wow! The the TSX .338/210 is a tough one if it keeps all petals of mushroom at over 3000 fps impact.

Makes you wonder if it will open at 1600 fps?

Big mushroom puts the brakes on penetration.

GSC HVs will open at 1600 fps and lose all petals around 2600 fps.

S&H brass veloexploders true NONCONs will lose all petals at 1600 fps and 2600 fps.

I rather like the better penetration of the latter two.

(excuse typos please, iphone)

S&H brass truncated cone FN solids are the model for deepest penetration with solids.

The .395/330 at 2800 fps were the best penetrator I have ever tested.

The only reason they would not do better at higher velocity is if the nose expands more than the minimal amount it did at 2800 fps.

I am thrilled to let Michael get his hands dirty on this excellent work.

I might round up the IWBB from pasture to try that .395/330 brass FN at higer velocity ... 🍌