

This topic can be found at:

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

**michael458**

**17 March 2010, 02:44**

### Terminal Bullet Performance

quote:

Originally posted by Macifej:

J

106 grs RL 15. Is there another primer besides Fed 215?

M[/QUOTE]

Not if you have 215's ... 🤔[/QUOTE]

I use Fed 215s, and a few Fed 215 Match, and then some Fed 215s!



As of November 2008 I had 8000 Fed 215s. A few weeks ago I took stock and had less than 3000 215s and was beginning to get concerned! Just happened into my local gun shop and friends place, and there he had several 1000 215 match? New! I had never used Match primers, but bought 2000 of them anyway to test. Next day--no different than my normal loads so I called up and got another 5000 of them. Today I have enough for a year or so, I hope? Surely they will come available before I run out again! I never run out of Fed 215s!!!!!!!!!!!!!!

Michael

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**michael458**

**17 March 2010, 02:47**

quote:

Originally posted by 465H&H:

Let's remember that RN solids do much better in elephant and buffalo than these tests would indicate.

465H&H

And we also remember that the Flat Nose Solids do better in elephant and buffalo than these tests indicate! And from my experience they also perform better in elephant and buffalo than Round Nose Solids. They penetrate deeper and there is less POTENTIAL for them to veer or tumble.

Michael

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**RIP**

**17 March 2010, 02:48**

Will load the S&H .510/535gr FN into cartridges for the 500 Mbogo and 50 BMG ... 2500 to 3000 fps ought to tell if velocity makes any difference in penetration in the IWBB and the STAB.

Maybe an S&H .510/510gr Brass VeloHexploder NONCON someday? 🤔

The .510/450gr GSC HV at +2800 fps ought to serve until then. 🤔

I would like to try that .395/310gr S&H Brass VeloHex NONCON "DeathStar" on cape buffalo. Hopefully it will stay inside the buffalo. I know these FNs will zip right through ... herd shooting risk ... but hey, sometimes blank happens, and requires Texas Heart Shooting, eh?

**michael458**

**17 March 2010, 02:49**

Sam

I am going to be out of sorts the rest of the week, maybe we can get together the following week?

Michael

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**RIP**

**17 March 2010, 02:50**



Worth repeating:

quote:

Originally posted by michael458:

And we also remember that the Flat Nose Solids do better in elephant and buffalo than these tests indicate! And from my experience they also perform better in elephant and buffalo than Round Nose Solids. They penetrate deeper and there is less POTENTIAL for them to veer or tumble.

Michael

**michael458**

**17 March 2010, 02:56**

quote:

Originally posted by RIP:

Will load the S&H .510/535gr FN into cartridges for the 500 Mbogo and 50 BMG ... 2500 to 3000 fps ought to tell if velocity makes any difference in penetration in the IWBB and the STAB.

Maybe an S&H .510/510gr Brass VeloHexploder NONCON someday? 😊

The .510/450gr GSC HV at +2800 fps ought to serve until then. 🤔

I would like to try that .395/310gr S&H Brass VeloHex NONCON "DeathStar" on cape buffalo. Hopefully it will stay inside the buffalo. I know these FNs will zip right through ... herd shooting risk ... but hey, sometimes blank happens, and requires Texas Heart Shooting, eh?

RIP and J

Yes, I am 100% sure more velocity with the 535 S&H would give deeper penetration no doubt in my mind. I was running a rather sedate 2273 fps. You see I quit workups with this gun very shortly after getting it. Lost interest, would not feed, was too big and heavy, and it did not say Winchester on it! It had so much dust on it I had to clean it to find all the working parts! So I used old data, and to be honest put 106 grs of RL 15 in every load for every bullet! But it sure did well when compared.....

Now, to more important things, talk about herd shooting, well if you are doing "herd Reduction" that pass thru is just fine--2 for 1! I am working up something for another herd reduction soon in Australia. My buddy Paul and I are going to do a big one, just he and I down there some time, maybe next year. I am getting him a rifle built and we must test it somehow?

Michael

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**boom stick**

**17 March 2010, 03:45**

I think this great white hunter shark bullet has a large meplat able to give optimal extreme damage and penetrate dead straight enough to make any shot work. Reducing the meplat will increase penetration but decrease damage. It went double the depth and did not alter path compared to the others. A+

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)

**jwp475**

**17 March 2010, 04:41**

quote:

Originally posted by Whitworth:

quote:

Originally posted by jwp475:

quote:

Originally posted by Mike70560:

I have a 30" Long 1 in 8 barrel on a 30-338 Win Mag. if we need some testing done.

You are only about 2 hours from me

By helicopter or lear jet?

By RAM 🙌

---

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

**Macifej**

**17 March 2010, 11:34**

quote:

Will load the S&H .510/535gr FN into cartridges for the 50 Mbogo and 50 BMG ... 2500 to 3000 fps ought to tell if velocity makes any difference in penetration in the IWBB and the STAB.

The higher velocity could be quite enlightening.

**Hoot Murray**

**17 March 2010, 12:05**

michael458

Thank you for the thread on bullet performance. Do you have any information relating to the Trophy Bonded Bullets. The reason I am asking is that my PH in Africa has recommended the "Sledgehammers" to me for use on elephant. Way back in the later 90's I used Trophy Bonded Bullets (the softs) in my 375 and 416 Rigby and had stellar performance. I actually had to call Jack Carter to get some 416 as I could not find any in stock anywhere. Jack sent me some from his personal stash. Jack informed me that he had sold the line to Federal and they were supposed to supply him the bullets, but at that point they had not.

I have not used any of the Trophy Bonded Bullets made by Speer. Were they quality bullets? Anyway I seem to remember that there were some failures with the Speer Trophy Bonded Bullets, but I cannot say for sure. Now I see that Speer has discontinued the Trophy Bonded Bullet line. Does Federal still load them in their Premium Safari loadings?

Muchas gracias,  
Hoot

**michael458**

**17 March 2010, 16:13**

Hi Hoot

Thanks for joining us, glad to have you!

To answer your question, I have little info, and no experience with the Trophy Bonded Sledgehammer. I often credit Jack with bringing the modern Flat Nose solids to the big bore rifle world. I really can't give a good history of these, but as I recall when Jack sold the line the quality of the bullet went downhill as they changed some of the materials in the bullet. Some here can give you a much better history of it than I can. What I do have, and will be playing with over the coming weeks is an old stash of 470 Trophy Bonded I bought a few years ago from Midway. These were after Jack, and the quality of the bullets are not up to speed, bearing surface is very low, they have a decent profile, but they are just not quite up to par I think. I have never tested them, and frankly just bought them because they were cheap and intended to use them for cannon fodder. But with my Capsticks I just never got around to messing with them. I must have a couple hundred of them.

The new Nosler looks for all the world like a similar nose profile to me, and 465HH was kind to send a few and they tested very good in my 458 Lott. He sent 500 gr 458s.

I just looked over at Midway and they say that new Trophy Bonded Expanding and Sledgehammers are on the way from Federal "Coming Soon" it says. Price seems reasonable enough at \$42.00 per box of 20 for 400 gr 416s. Same story over on 458 bullets, Coming Soon!

When they come I will get some and give them a go.

According to Midway They have 416 Remington Federal Factory loads with Trophy Bonded Sledgehammers at \$135 per box. So Yes, I suppose Federal is loading the factory rounds in most of their line of big bores. 416 Rigby for \$202 per box.

When is the elephant hunt? What sort of rifle, cartridge? Still 416 Rigby! Depending on the rifle and what have you, will these feed and function in the rifle?

I am quite sure one of the reasons your PH recommends them is that he has seen good success with them. This tends to be the case a lot of the time. He may have not seen a Barnes Banded used or many other good bullets that are out there, the North Forks for example. Depends on his personal experience and what he has seen. I would be very comfortable of course with the Barnes Banded, North Forks, GSCs, Agent J's bullets, Noslers (would like to test them more) and a few others. We are truly blessed with a ration of good and proper solids these days, and it seems demand is going up on a regular basis, which pleases me, as I do love solid bullets for my rifles! But one of the prerequisites is that it feed and function 100% in your rifle, without that it could be an issue?

Michael

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**srose**

**17 March 2010, 17:38**

Michael,

We can do the double tests whenever you get the time no hurry.

I shot some of the Trophy Bonded solids in my 416 Rem this year on buffalo and did not like them. Found one bullet lodged in off shoulder and bent. My Woodleighs kicked up dirt on the far side after going through the shoulders. Both shots were broadside at maybe 20 yards center of shoulder.

Sam

**srose**

**17 March 2010, 17:43**

I'm sorry I said I was using my 416 Rem on buff and I meant to write 470 NE with Federal factory Trophy Bonded Sledgehammers. I had just read Michaels post and had 416 on my mind.

**Phatman**

**17 March 2010, 18:02**

Hi Guys,

There is the possibility that the .510 bullets will fail @ 3000 fps.  
All alloys have their limit. If it happens just change the alloy to something tougher like copper manganese.

John 

Give me COFFEE and nobody gets hurt

**michael458**

**17 March 2010, 20:12**

Sam

I got the photo and we will look at it below. This Sledgehammer is last year right? So that is pretty recent, looks like to me construction of this bullet is not quite where it should be. I know little or nothing about them. The Woodleighs and the Hornady look fine.



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**michael458**

**17 March 2010, 20:42**

Nose Profile---Meplat Size % Of Caliber---Twist Rate---Velocity---Construction---SD!

Those are all factors!

I once had to argue that Construction or materials was a factor and very important! I was told by the "EXPERTS" construction or material was irrelevant! I think from Sams photo and the bent Sledgehammer that "construction and Material" is indeed relevant!

I think that Hoot should be looking towards other premium solids until that can be investigated a bit further.

This more or less leads into something I have been meaning to get to and have not had time!

I believe in pushing bullets to their limits in the test work, but it must be within reason for a mission you intend with said bullet. Don't test hunting bullets on 1 Inch Steel plates, it has no bearing. While my wet print test medium is perfect for testing a lot of things concerning our hunting bullets, including solids, it still comes up short on putting enough stress on the solids to test construction and materials. I have never had a bent bullet or broken bullet in wet print mix. So we need a little more stress of some sort!

Oh, the T'Rex box consisting of wood boards and even the nearly indestructible Rhino Board! Still no bent or broken bullets, a lot more stress, throws every bullet a hard go at it, but still all of them tough enough not to cause any serious issues!

Well I have been thinking of this and have even been doing some preliminary work on the issue and I think I am close.

First what does one do with a bunch of chewed print that is too chewed to be consistent in our normal tests for penetration? Make a T'Rex box! The most important factor in a T'Rex box is not a little bit of chewed print, it's the other material in the box that is causing the stress! Rhino boards and wood boards not enough stress. How about cinder blocks??? Well you know I have some left over cinder blocks, or concrete blocks from building the range a few years ago. So I took a look at them recently.

My intentions were to take a 1.5 inch slab of cinder block/concrete block and place it 5 inches inside wet print mix, then to take another 1.5 inch block slab and have it 20 inches behind the other or 20 inches of wet print between the two blocks. Well what happened and I did not notice until later is that I put the block in at 20 inches and 5 inches, leaving 15 inches in between, so the tests will have to be repeated at my original thought. I want 20 inches in between the two slabs and 5 inches in front of the first one.

I will be conducting this NEW T'Rex test on everything we have done so far, as long as I still have samples and of course will do with all the bullets I keep or have in stock as time goes on. This will also be recorded in the data, but certainly noted and kept separate from normal data. This is an added stress test that will I think address construction and or material that a bullet is made of. Consistency is really not a big issue on the wet print in between, the stress will be coming from the blocks themselves. Of course I won't just be stuffing chewed up mess in between, it will still be reasonable material for this, but not for our normal testing.

I will show you some examples.

Michael

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**michael458**

**17 March 2010, 20:52**

Of course I test first what I am using in my rifles currently, and what I know have done a good job in the field on buffalo and elephant and other work too. This gives me an idea of what success or failure is for the tests. Same as the normal mix--We have heard how successful the RN WOODleighs are on elephant and buffalo, so anything that performs in the tests better than these (almost all of them) then must be REALLY good! So let's have a look!

First the blocks--This is close enough for me to call it 1.5 inches!



Deciding what to do for the first test of this? I picked my 50 B&M with it's 510 gr SSK Solid at 2120 fps. Have shot a damn lot of buffalo and two elephants with this bullet and some other critters, this bullet works and I have 110% confidence in it's abilities to do what I need done from any end of the buffalo, to any angle on the elephant, this has done it for me every single time.



50 B&M  
510 SSK Solid  
Block #1

photobucket



50 B&M  
510 SSK Solid  
Block #1

50 B&M  
510 SSK Solid  
Block #1

photobucket

50 B&M  
510 SSK Solid  
Block #2



photobucket



Should Read  
"AT 20" Wet  
Print a 1.5 "  
block  
Inserted.

50 B&M  
510 SSK Solid  
Muzzle Velocity 2120 fps  
Concrete Block T'Rex Test  
5 Inches Wet Print  
1.5 Inch Concrete Block  
20 Inches Wet Print  
1.5 Inch Concrete Block  
Remainder Wet Print  
Through Both Blocks to 23 Inches  
Total Straight Penetration



photobucket



I would say this put some stress on this bullet! I have not recovered many of these bullets from buffalo, elephant or anything else, but the ones I recovered have not looked like this!  
Michael



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**boom stick**

**17 March 2010, 20:53**

So what say the mythbusters on Woodleigh solids?

<http://www.woodleighbullets.co...Monos%20page%201.pdf>

Hydrostatic Stabilization

By John Marozzi

Bachelor of Science/Metallurgy

Hydrostatic stabilization is a technique that has been used in the brass extrusion industry for many years. It is a method of producing pierced hollow bars to very precise concentricity by using tool design to harness hydrostatic forces to centralise mandrels when punching through brass billets.

Now for the first time this concept has been used in bullet design to harness the same forces to produce a bullet that resists

deflection and achieves deep

straight-line penetration.

The task was to design a bullet that

would bridge the gap between

traditional expanding bullets and

modern solids. These new generation

hydrostatically stabilized bullets

deliver tremendous shock transfer

with the penetration of the latest

sixth generation African monometal

solids and extremely reliable

straight line performance.

The depressed nose at the leading

edge of the bullet "cores" the

medium (flesh) through which it is travelling which then creates a "pressure ring". The coring and

pressure ring balance each other out to stabilise the bullet in the direction of travel. If the bullet hits

hard bone the flesh core dissipates but immediately reforms, restoring the balance between it and

the pressure ring, thus redirecting the bullet to its original direction of travel.

Additional benefits of this design are that the pressure ring creates a devastating wound channel and

massive hydraulic shock transfer. The bullet actually travels in a low pressure cavitation bubble

which aids in bullet stabilisation and greatly increases penetration due to significant reductions in

frictional forces acting on the bullet (ref. fig 1).

This new bullet cuts a clean entry hole promoting profuse bleeding. Exit wounds are ragged due to

the release of energy built up in the pressure ring as the bullet exits.

This homogenous bullet is made from a specially formulated copper alloy. Only the purest raw

materials are used in its manufacture. The result is a bullet that has better toughness than modern

homogenous bullets but creates breach pressures similar to standard gilding metal jacketed soft

nose projectiles. This combination of materials and design allows for good regulation in most types

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)

**someoldguy**

**18 March 2010, 02:20**

quote:

Meplat 53 percent of caliber

Gentlemen, this certainly bears out Dr. M's rule about optimal meplat percentages!

---

Glenn

**I Bin Therbefor**

**18 March 2010, 03:56**

quote:

So what say the mythbusters on Woodleigh solids?

Boomstick

They have been tested on this thread and perform very well. That does not mean that the designer is correct in his logic. If I had nickel for every time a guy that does something that turns out right and has the wrong explanation I'd be wealthy beyond imagination. 🤖👍

**michael458**

**18 March 2010, 04:14**

Boomy

I would love to get my hands on some more of these. Con only had the 400 gr bullets, but they did fanatastic, dead straight to 50 inches as I recall. In 458 of course. Now John Marozzi is talking a lot about hydrostatic stabilization and so on and so forth. I leave that to others to sort out. They work, regardless of what, why or how. Or at least what we tested did.

Now thanks for adding this, I have seen this before, and the one thing I want to point out about the entire advert is this;

#1-- achieves deep straight-line penetration.

#2-- extremely reliable straight line performance

#3-- stabilise the bullet in the direction of travel

#4-- greatly increases penetration

I notice a lot of mention about deep straight line penetration. Do you mean that ALL SOLIDS do not achieve deep straight line penetration???? Obviously these bullets are Woodleighs entry into the new Science of Solids! I predicted as much more than two years ago, that in time every major bullet maker would be making a flat nose solid of some sort, seems I was right after all!

No myth here, what we tested works and works very well. I would like to see some more of them, 450 and 500 gr 458s would be nice. Still it is a rather "ugly" bullet, and gets even uglier when loaded!





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**boom stick**

**18 March 2010, 04:32**

I would say that 50" from such a low SD bullet is great. If you look at the pic in the link it depicts the "Shoulder" of the nose touching the medium but I would think that the front semi cup doing all the work.

[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)

**jwp475**

**18 March 2010, 04:39**

SD or no SD 50" is excellent, that is more than a 500 grain Woodliegh rounds nose if my memory serves

---

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


**RIP**

**18 March 2010, 05:10**

Doc M,  
So concrete impact at 2100 fps expands a copper solid about like water impact at 2700 fps? 😊

Your .500-cal/510-grain copper solid is too stubby to bend!  
With an SD of .291, it seems to define the monometal solid ...  
The new standard, I'll risk pronouncement:

.300 +/- .010  
or  
.290 to .310

no less, no more? 

**boom stick**

**18 March 2010, 05:22**

the Woodleigh non deforming solid proves that with the right nose profile a SD of .270 is 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)


**I Bin Therbefor**

**18 March 2010, 05:45**

quote:

Originally posted by boom stick:  
the Woodleigh non deforming solid proves that with the right nose profile a SD of .270 is enough.



Some place or other I've got a short article/picture of an experimental version of this that has a steel nose. Same shape. Don't know how it is attached. 

**RIP**

**18 March 2010, 06:21**

boomer,  
OK, corollary allows as low as .270 for "tit-nose" solids. TN solid instead of FN solid.

IBT,  
Are you thinking of Norbert Hansen's "superpenetrator?"  
That is like tit-nose (TN) with a steel pasty (P) over the nipple, a "TNP solid."

**capoward**

**18 March 2010, 07:15**

458 B&M  
400 Woodleigh  
Impact Velocity 2312 fps  
50 Inches total Penetration  
100% Straight Line Penetration



photobucket



Perhaps this puppy needs to be subjected to the new improved T'Rex mix to identify how it'll hold up.



Jim

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

**MikeBurke**

**18 March 2010, 07:37**

I keep trying to find a test that will allow the Woody's to out penetrate North Forks. Still unsuccessful.

Caliber: 470 Nitro Express  
Rifle: Krieghoff Double  
Twist Rate: 1 in 18.9  
Brass: Jamison  
Primer: Remington 9 1/2M  
Powder: Reloder 15 for standard velocity load (approximately 2100 fps)  
AA 5744 for reduced loads (approximately 1650 FPS)

The test box is fabricated from 2 by 6 pine boards and is 72" long.  
Test media consisted of 1/4" luan, 12" of saturated newspaper, 2 by 6 treated pine (shooting through the 1 5/8" thickness), an approximate 1 1/4" void and then a series of twelve pieces of 3/4" plywood with ten saturated newspapers 20 pages each between each piece of plywood (plywood, newspaper, plywood, newspaper etc) and approximately 33" of saturated newspaper to fill the box. Great care was taken to make certain the newspaper was thoroughly soaked in a tub prior to placing in the test bed. After placing the paper in the test bed excess water was permitted to drain for 30 minutes.  
The bullet entered the box at 32 feet from the muzzle.

Bullets tested:  
Woodleigh 500 Grain solid  
Bullet Length: 1.333" Prior to firing  
Bullet Meplat: Round Nose

Test consisted of firing two Woodleigh bullets in the test media at standard Nitro velocity and two Woodleigh bullets at reduced velocity.

Reduced Velocity:  
Average impact velocity was 1670. This was approximately 40 FPS than my previous similar loads. The ambient temperature was approximately 20° warmer for this test and I am not certain how temperature sensitive 5744 is. The first round stopped in the 7th piece of plywood. Total penetration was approximately 28.5". The second round stopped between the 8th and 9th piece of

plywood. Total penetration was approximately 32". Both bullets were sideways by the fifth board.

**Nitro Velocity:**

Average impact velocity was 2070. The first round stopped in the 8th piece of plywood. Total penetration was approximately 31". The second round stopped in the 9th piece of plywood. Total penetration was approximately 33". Both bullets were sideways by the seventh board.

Bullet length grew by .011" due to pushing the core out of the base.

This is the fifth test I have conducted with the Woodleighs. I also have conducted five tests with the North Forks. This may sound like a broken record but the North Forks have consistently outperformed the Woodleighs regardless of velocity or test media.



The picture above is the first piece of plywood the bullets penetrated. Note the location of the holes.



The picture above is the 5th piece of plywood the bullets penetrated. Note the location of the holes as they relate to the first picture. Bullets are beginning to go sideways and off course.



More sideways bullets

**MikeBurke**

**18 March 2010, 07:42**

I stamped and measured a 500 Grain .474 Hornady DGS meplat. It measured .270" to .272" or 57.38%

Should shoot some DGS tomorrow.

After that test my goal is to bend or deform a NF, Woodleigh, and DGS.

This post started page 51 and is the 2000th reply. It has been fun to be part of this thread, thanks to all.

**I Bin Therbefor**

**18 March 2010, 09:59**

quote:

Originally posted by RIP:  
boomer,  
OK, corollary allows as low as .270 for "tit-nose" solids. TN solid instead of FN solid.

IBT,  
Are you thinking of Norbert Hansen's "superpenetrator?"  
That is like tit-nose (TN) with a steel pasty (P) over the nipple, a "TNP solid."

RIP

Check this site for picture about half way down  
<http://www.woodleighbullets.co...Monos%20page%202.pdf>



"experimental steel tipped"



**Hoot Murray**

**18 March 2010, 10:37**

michael458,

Thank you for answering my post. The rifle I have is a Ruger (an older, heavy one) in 416 Rigby. I hunted with this PH twice before and I shot everything I took with the Trophy Bonded Expanding Points. My Cape Buffalo was facing me at about 35 yards. I shot him in the chest and the Trophy Bonded Expanding Point went the full length of the buffalo, taking the top of the heart off. The bullet would have exited, but it hit the pelvic girdle shattering it. The bullet was a perfect mushroom, weighing 391 grains at the end of the trip. It started out at 400 grains. I had the Sledgehammers loaded in the rifle below the soft point, but another shot was not needed as the buffalo was down.

I have never shot anything with the Sledgehammers so I really don't know about their performance on game.

I am going on an elephant hunt in October and I am told that any soft point is out of the question hunting elephant, even a heart lung shot. It makes sense to me and that is why I am wanting the best solid out there. As I stated before, it seems to me that there was some performance issues with Trophy Bonded after Jack Carter sold out. The ones I have used with complete success were the ones I got from Jack Carter. Sadly, I don't have but a few left in the softs, but I have a full box of 25 of the old Sledgehammers. There again not having shot anything with them, I was hoping that someone who has could tell me their experience with them. I sure as hell don't want to mess up a elephant hunt with a poorly constructed bullet that does not perform well.

Reading the posts on this thread, especially yours, really gives one a great deal of knowledge and insight on solid bullets. One would think that solids would perform as intended, but that is not the case.

Muchas gracias,  
Hoot

**michael458**

**18 March 2010, 16:18**

quote:

Originally posted by RIP:

Doc M,

So concrete impact at 2100 fps expands a copper solid about like water impact at 2700 fps? 😊

Your .500-cal/510-grain copper solid is too stubby to bend!

With an SD of .291, it seems to define the monometal solid ...

The new standard, I'll risk pronouncement:

.300 +/- .010

or

.290 to .310

no less, no more?



RIP

The concrete block does put some stress on the bullet, no doubt. I don't pronounce that the New T'Rex Test means anything, but it sure is interesting. And it is sorta fun to do too! Of course a lot of things can be learned, from doing Fun things I suppose!

As for SD I am still struggling with it. I have it dead last as a factor concerning solid penetration.

M

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**michael458**

**18 March 2010, 16:39**

quote:

Originally posted by Mike70560:

I stamped and measured a 500 Grain .474 Hornady DGS meplat. It measured .270" to .272" or 57.38%

Should shoot some DGS tomorrow.

After that test my goal is to bend or deform a NF, Woodleigh, and DGS.

This post started page 51 and is the 2000th reply. It has been fun to be part of this thread, thanks to all.

---

Mike

I received yesterday my 500 gr 474 Hornady DGS, 500 gr 458 DGS, .510 570 DGS, .510 570 Barnes Banded, and some neat little 380 gr brass Solids in .500 caliber to play with, made by Satern Custom Machining--all from Midway. God knows when I get to test, honestly I had a wisdom tooth pulled yesterday, and my head is exploding this morning. If I had to shoot a 22 lr I am quite sure my head would roll off, hit the floor and start bouncing!

The Hornady DGS sure looks nice. I do love Hornady bullets, one of my favorites! But that meplat is not big enough to do the steering in our tests. A lot of other factors are going to have to take over and help out. I don't think with your 1:18 twist, that is going to be much help either! I look forward to seeing what you can do with these in your gun. I am going to do the same here with the damn Capsticks I have! They have 1:10 twists according to RIP, but RIP and I both concur the barrels are worth a damn, oversized. So we will see, I have two of them, maybe 1 will surely do something. It will be important for me if the bullets are not undersized to .473 or so. I have not measured, yet, just opened the box and looked at all of them.

It has been good to have you here too by the way! I am very pleased you are part of this, you are making a great contribution with your efforts. But if you are still trying to get the woodleigh to penetrate straight, well you have a mission ahead of you!

I have the secret to making a round nose penetrate the entire length of a test medium box, dead straight! I know how! Any round nose too! HEH!

Michael

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**MikeBurke**

**18 March 2010, 16:51**

The DGS bullet diameter is .4735 by my measurements, which is in between the Woodys (smallest) and North Fork. When you are feeling better I am anxious to see your meplat measurement. Stamping is a good method, I just see a little inconsistencies in my measurements.

Take care we do not want to see your head on the floor.

**michael458**

**18 March 2010, 17:29**

Mike

I think the next couple of days are light duty for me. So I will get in the lab, do some measurements, input some data, and so forth. I have some more test work from the other day to post too. Stamping is a good method, about the only one I can get consistent measurements. I make two stamps, get my glasses on, and the lope, and measure several times each stamp to make sure. With some bullets I know we are losing that outside edge some, but I think there is no way I can measure that accurately, so stamping is it.

I think we need to give Hoot a hand and get him ready for his hunt in October!

M

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**michael458**

**18 March 2010, 19:12**

quote:

Originally posted by Hoot Murray:  
michael458,

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even a heart lung shot. It makes sense to me and that is why I am wanting the best solid out there. As I stated before, it seems to me that there was some performance issues with Trophy Bonded after Jack Carter sold out. The ones I have used with complete success were the ones I got from Jack Carter. Sadly, I don't have but a few left in the softs, but I have a full box of 25 of the old Sledgehammers. There again not having shot anything with them, I was hoping that someone who has could tell me their experience with them. I sure as hell don't want to mess up a elephant hunt with a poorly constructed bullet that does not perform well.

Reading the posts on this thread, especially yours, really gives one a great deal of knowledge and insight on solid bullets. One would think that solids would perform as intended, but that is not the case.

Muchas gracias,  
Hoot

OK Hoot, let's go to work!

Elephant and softs or expanding do not mix! Solids all the way! Don't concern yourself at all with any expanding bullet for this sort of work.

OK we are 416 Rigby on the Ruger. Do you handload? If you handload we can make short work of this, if not, then we have some problems. If you handload it will be a bit of work, but you can try out several different bullets in your rifle, and feed and function being at the top of the list.

Have you tried other loads or bullets in the rifle? If so what?

I always refer to Midway for what is available, 400 Barnes Banded. The 400 gr Nosler Solid is available, and the 458 version tested well--416 version???? Don't know.

The first and foremost I would try is the 400 Barnes, 350 Barnes, and the North Fork bullets. North Fork is a regular lurker here.

Now all this assuming that you load. Also buying bullets is expensive and maybe they don't feed in your rifle. If you like, I will load you some dummy rounds, send them to you to check in your rifle for function and we can proceed from there. If so-PM me and send an address! I very much want you to be successful on this trip! But we need to get going and I need to know what we are dealing with.

Michael

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**michael458**

**18 March 2010, 19:49**

Some more to ponder with the New T'Rex test! Again, I am not sure what this proves if anything, but it is fun and it is interesting and it helps chew up test medium that otherwise would be trashed! Take it for what it is. But you will be seeing more of this in the future as I am having a good time with it! Proves nothing, just puts extra stress on some of these bullets to see how they handle abnormal conditions!

Here is a 450 Barnes Banded from my 458 B&M, of which I have particular interest in since I have used this bullet rather extensively in both 458 Winchester and 458 B&M and it has proven a perfect solid for use in both these cartridges.

458 B&M  
450 Barnes Banded Solid  
Block #1



photobucket

458 B&M  
450 Barnes Banded Solid  
Block #2



photobucket

Should Read  
"AT 20" Wet  
Print a 1.5"  
Concrete Block  
Added!

458 B&M  
450 Barnes Banded Solid  
Muzzle Velocity 2190 fps  
Concrete Block T'Rex Test  
5 Inches Wet Print  
1.5 Inch Concrete Block  
20 Inches Wet Print  
1.5 Inch Concrete Block  
Remainder Wet Print  
Through Both Blocks to 24 Inches  
Straight Penetration  
Veer off course to 32 inches  
Out of Medium



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Veer off course to 32 inches  
Out of Medium



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Through Both Blocks to 24 Inches  
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**416Tanzan**

**18 March 2010, 20:01**

For Hoot

As you might gather from my handle, I am a fan of the 416 Rigby, even though I am an antelope and buffalo hunter rather than elephant. I love the 416 for its range, flexibility, comfort, and smack on the animal.

You will be in good hands with Michael, though there are some special issues to check with the 416 Rigby.

The first is barrel twist. Find out if your rifle is 12", 14", or the 'traditional' 16.5" twist. This is a vital first step.

If your barrel twist is 1 in 12" you may be OK with a 400 grain monometal FlatNose solid (like Barnes). I guesstimate a 3.7 stability factor (see below). However, if your twist is 14" you are probably marginal/slow for stability, and you are definitely marginal/slow with a 16.5" twist for a 400 grain monometal.

So another point is to consider a 350 grain solid. You might give up a couple of inches of total penetration in order to better guarantee much more straight-line penetration. (You should be able to handload to significantly higher velocities than with a 400 grain, so that your momentum loss may be negligible.) For example, 50" of straight penetration in Michael's medium is worth much more than '60"', where only the first 25-30" was straight and the rest was at a cockeyed angle right out of the box.

I would recommend loading a 350 grain solid to 2650 fps, or even 2750-2800 fps if you want.

The alternative to a 350 grain mono-solid is to find a reliable lead-core 400 grain, flatnose solid.

Whatever you do, you should check the results with <http://www.jbmballistics.com/cgi-bin/jbmstab-5.0.cgi>

You will need the twist rate, bullet length, calibre diameter (.416") and bullet weight (400 grain) to get a reliable stability reading. The velocity can be filled in as 2300 fps, it is less critical. I would recommend a stability factor of over 3.0, including a flat nose profile, for your application.

Naturally, feeding will be a priority, no matter which solid you choose. As you are aware with any dangerous game, a hunter needs absolute confidence in the equipment. And confidence can aid in shot placement, which makes the rig even more effective.

Enjoy your hunt, and enjoy your prep.

+++++

"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**

**18 March 2010, 21:19**

Tanzan

Thanks for kicking in on this, and you are 100% correct, check that twist, very important on 416 I think. I would guess 1:14, but.....? If stability could be an issue with the 400s, then one gives up nothing with either the 370 NorthFork or 350 Barnes, both available and I have both that I could load for samples to see if they will feed in Hoots rifle! Both test good, I have used the 350 Barnes in the field, but not enough. I have little experience with buffalo and 416s of any sort--X1 only, with the 416 B&M in 2007.

Velocity with the Barnes or the North Fork will only help to stabilize, and give deeper penetration in my opinion. 1:14 is sensitive to 400 + in 416! Velocity can help with that, but it's got to be around 2500 fps or so in my opinion. Might for sure be far better off with the 350-370 gr bullets. Straight penetration is all that counts! 50 Inches in my tests is plenty.



**416 B&M**  
**350 Barnes FN Solid**  
**Muzzle Velocity 2445 fps**  
**50 yd Impact Velocity 2285 fps**  
**52 Inches of total Penetration**  
**100% straight line**



Of special note!!!! Loss of stability at the very end of penetration is of NO CONSEQUENCE and of No Import! A lot of the time, most all will lose stability right at the very end of penetration. The loss of velocity will many times cause the loss of stability, but at the very last inch or two of penetration!

Compare to below!

**416 B&M**  
**400 Hornady FMJ**  
**Muzzle Velocity 2293 fps**  
**20 yd Impact Velocity 2243 fps**  
**28 Inches of straight penetration**  
**Veers off course at 28" out of box**  
**at 34 inches. Tumbles at 30**  
**inches. Total 6 inches off course**  
**from 28-34 inches and out.**





Now the 400s that are not stable in my lower velocity 416 B&M 1:14 twists!!!



But as we increase velocity with the same bullet in 416 Remington case and still 1:14 twist, stability is increased by velocity!

**416 Remington  
400 Barnes Banded Solid  
Muzzle Velocity #1 2497 fps  
22 yd Impact Velocity 2430 fps  
Muzzle Velocity #2 2493 fps  
22 Yd Impact None Recorded  
#1 60 Inches Total Penetration 1  
inch off course  
#2 60 Inches Total Penetration 1  
Inch off Course  
Both Bullets Veer slightly up  
Found Nose forward up angle.**



M

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