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Bullet Performance

Page 1 ... 27 28 29 30 31 32 33 ... 304

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capoward
One of Us

posted 11 February 2010 11:39 [Hide Post](#)

Hey Boomy,
quote:
Originally posted by boom stick:
WOW!!!
A 150 grain .500" bullet getting 4,000 fps and 5,000 FPE would be WILD!!!
An aluminum warthog bullet!
And a bunch of 500 S&W shooters would love a break from recoil lol 😊
maybe a 100 grain .500" pistol bullet @ 2,000 FPS

A 150 grain .500" aluminum bullet can easily met 5,000 ft-lbs but the velocity will be close to 3,000 fps from the 500 MD. But yes it would be interesting from a 500 S&W:
Barrel length 14"
Powder: Hodgdon HP38
UCC: 32.5grs, CW: 20.0 = 2373fps & 1876ft-lbs @ 59433 psi (100.0% propellant burnt)

quote:
Originally posted by boom stick:
Capo...
You might "Need" some aluminum 200 grain 577 bullets for your project

The same bullet upsized to .585 caliber most likely be close to 175gr but it does have potential:
585 H&M with 20" barrel w/175gr .500" SST HP Aluminum bullet, Hodgdon Li'Gun powder;
UCC: 119.4grs, CW: 119.4 = 4066fps & 6460ft-lbs @ 56705 psi (99.18% propellant burnt)
Height of Sight Above Bore: -1.97", Peak to LOS: 115yds (0"), PBR Zero: 239yds (-2.88" low)
These aluminum SST bullets appear to be interesting animals. Guess Michael needs to get busy and verify weights for a .500 caliber and a .585 caliber HP bullet using the design of the 470gr .500 SST HP Copper bullet.

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

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

buffalo
One of Us

posted 11 February 2010 11:51 [Hide Post](#)

quote:
Originally posted by RIP:
Michael,
You are a machine! Just banging out the truth.
Thanks for the good work.

Well - I can only second that 200% 😊

Posts: **873** | Location: **Denmark** | Registered: **04 January 2005**

boom stick
One of Us



posted 11 February 2010 12:31

[Hide Post](#)

Great numbers!!!

I think that a flat point on the larger bores at these velocities will do enough damage that you won't need petals to sheer and potentially mess up straight line penetration.

That is some serious firepower with aluminium bullets considering with a handgun you are shooting less than 100 yards and more likely 50 yards!

quote:

Originally posted by capoward:
Hey Boomy,

quote:

Originally posted by boom stick:
WOW!!!

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An aluminum warthog bullet!

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Height of Sight Above Bore: -1.97", Peak to LOS: 115yds (0"), PBR Zero: 239yds (-2.88" low)

These aluminum SST bullets appear to be interesting animals. Guess Michael needs to get busy and verify weights for a .500 caliber and a .585 caliber HP bullet using the design of the 470gr .500 SST HP Copper bullet.

[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
One of Us



posted 11 February 2010 12:38

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I think you can make a serious aluminum bullet for the 500 S&W with the same profile as those 600 grain bullets that fill up that long chamber.

I think there is a market for those who want to target or plink ect with them

[577 BME 3"500 KILL ALL 358 GREMLIN 404-375](#)

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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**



someoldguy
One of Us



posted 11 February 2010 12:50

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The results of the aluminum bullet and the brass HP bullet illustrate a trend I've noticed for some time now. It does involve a calculation, but it's a simple calculation and not anything to be afraid of. After all, this is rocket science, not brain surgery. 

What I do is take the kinetic energy, in ft-lbs, on impact (I don't have to go through the calculation because most of us know it or can find it out) multiply by 12 and divide by the penetration depth in inches. The result is what I call the "resisting force." (It was actually someone else who called it that, but I forget who.)

I don't think this calculation is hyperanalyzing. Or I hope not. Because the resisting force tells us quite a bit IMO. It tells us if the bullet was damaged (if we know the strength of the bullet material), whether there was cavitation or trauma, the target torn all to hell, etc.

As an example, here are a few examples from the notes I've taken which illustrate how meaningful this could very well be:

quote:

.458 B&M
100 Aluminum (well, 96 Aluminum)
3258 fps impact
KE on impact is 2262 ft-lbs.
Penetration 7"
Resisting force is $2262 \times 12 / 7 = 3878$ lbs (!)

Result: Bullet appeared to lose roughly half its length, and there was a large trauma of about 2" at 2"-3" depth.

.458 B&M
305 Brass Hollowpoint
1216 fps impact
KE on impact is 1001 ft-lbs
Penetration 16"
Resisting force: $1001 \times 12 / 16 = 751$ lbs

Result: Bullet found sideways; petals sheared @ 3"

458 B&M
305 Brass HP
903 fps impact
KE on impact 552 ft-lbs
Penetration 13"
Resisting force: $552 \times 12 / 13 = 510$ lbs

Result: Bullet found sideways; petals not sheared

Of course, this may not be a revelation to anyone, but I think it's a very interesting trend that might be overlooked.

However, the resisting force only matters after the fact because there's probably no satisfactory way to predict it. Nevertheless, it think it can help us to understand why some things happened in the way that they did.

Glenn

Posts: **942** | Location: **Alabama** | Registered: **16 July 2007**



416Tanzan
One of Us



posted 11 February 2010 13:55

[Hide Post](#)

quote:

Originally posted by capoward:
416T,

If you're concerned with African' heat messing with your velocity and pressure levels then why not utilize Hodgdon's H4350, one of their Extreme powders which they list to be very stable with very little velocity deviation in the 0°-125° temperature range.

Thanks again. Yes, this makes Hodgdon 4350 look pretty good as a single powder. The Hodgdon promotional looks pretty good, too. It should be noted, though, that Quickload generally gives a 4k psi rise when temperatures go from 70F to 125F. None of the Hodgdon tests showed such an increase.

And again, there is a question on the 338WM with 250 grains. The loads look awfully light:

quote:

Hodgdon H4350 UCC 71.0grs; CW 65.0grs = 2665fps & 3944ft-lbs @ 60405 psi.

65/71 would be a charge of only around 91.5% of usable case capacity. Either we need something slower to fill the case, like H4831, or the data isn't quite right.

Any advice, commentary?

PS: I'm fine on trajectories, thanks to jbmballistics.com. Since I would shoot to 300 yards I use the TSX as base with 3" max height. The solid should be close but it can't keep up after 200 yards.

+--+--+--+--+

"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.

Posts: **4253** | Registered: **10 June 2009**



michael458
One of Us



posted 11 February 2010 14:09

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Tanzan

I have plenty of H4350, I will try some of those for you with the 250 TSX, tomorrow. I also have H4831 too. I will look and see what's what. Get them out tomorrow.

Oh My, Capo and Boomy, they are at it again with aluminum!!!!!!!!!!!!!!!

Ok, I will check into that too. Currently I really don't have enough samples to do much real work with. No way I have enough to start load data workup, only have 5 samples each of those, and already shot 1 each! Now, 4! I will check on some. Both .500 and .458.

Michael

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

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



Phatman
One of Us

posted 11 February 2010 18:11

[Hide Post](#)

Hello,
So an aluminum bullet for a 44mag would weight about 60 grains?
Damn, you could get over 2000 fps out of a revolver 🤖
Be one Hell of a personal protection load. 🚬

John 🤖

Give me COFFEE and nobody gets hurt

Posts: **1608** | Location: **San Antonio, Texas** | Registered: **04 January 2010**



Whitworth
Moderator



posted 11 February 2010 19:10

[Hide Post](#)

quote:

Originally posted by boom stick:
I think you can make a serious aluminum bullet for the 500 S&W with the same profile as those 600 grain bullets that fill up that long chamber.
I think there is a market for those who want to target or plink ect with them

I don't know how good they would be for plinking at that light weight. I certainly wouldn't hunt with them -- they could work on thin-skinned game, but they wouldn't penetrate deeply and they would do a lot of tissue (read: meat!) damage. Too light, no momentum. Should be devastating in defensive situations at close ranges.

"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**



boom stick
One of Us



posted 11 February 2010 19:35

[Hide Post](#)

Agreed.
Not a meat getters bullet... well maybe hogs.
You might not want to use your powerful hunting 44 mag or 500 SW for home defense because of overpenetration but this changes the story. Pants pissing intimidation with a big gun but not going through the whole house. Headshots with a 2,000 fps Alu bullet would be quite messy though. That would give the folks at the crime shows some serious splatter material.
Using your hunting handgun for home defense adds value to your gun. If you can get more shots off quicker because of less recoil that is a good thing in that kind of situation.
Now who would make these bullets in .500 and 577?
I bet plenty of 44 and 45 owners would love to try them for shits and giggles. 60 grain 2,000 fps 454 Cassul load for rabbit or duck season 😊

[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
One of Us



posted 11 February 2010 19:50

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Don't think of them as just Aluminum but HVSP High Velocity Special Purpose. Give it a fancy name and acronym and it is more legit 😊

Also less to type than aluminum 🇹🇼

You are a pioneer Mr. Michael.

Don't be surprised if the HVSP bullets in big bores and big bore sixguns don't get more popular because of your work done here.

You have to admit you are having fun doing it 😊

quote:

Oh My, Capo and Boomy, they are at it again with aluminum!!!!!!!!!!!!!!

[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**



Whitworth
Moderator



posted 11 February 2010 20:15

[Hide Post](#)

quote:

Originally posted by boom stick:
Agreed.
Not a meat getters bullet... well maybe hogs.
You might not want to use your powerful hunting 44 mag or 500 SW for home defense because of overpenetration but this changes the story. Pants pissing intimidation with a big gun but not going through the whole house. Headshots with a 2,000 fps Alu bullet would be quite messy though. That would give the folks at the crime shows some serious splatter material.
Using your hunting handgun for home defense adds value to your gun. If you can get more shots off quicker because of less recoil that is a good thing in that kind of situation.
Now who would make these bullets in .500 and 577?
I bet plenty of 44 and 45 owners would love to try them for shits and giggles. 60 grain 2,000 fps 454 Cassul load for rabbit or duck season 😊

Definitely *not* hogs! They are a world denser than deer and quite frankly, I love pork so much that I would hate to lose the meat -- or the hog when it runs off with a superficial wound..... 🇹🇼

"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**



boom stick
One of Us



posted 11 February 2010 20:25

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Doing some ATF research and it seems from what I gather pistol bullets made out of aluminum are not considered "Armor piercing" so that is a good thing. Rifles have no issue at all.

If some are worried about oxide I guess they can copper plate these so they will look like any other bullet minus the weight.

1. a projectile or projectile core which may be used in a handgun and which is constructed entirely (excluding the presence of traces of other substances) from one or a combination of tungsten alloys, steel, iron, brass, bronze, beryllium copper, or depleted uranium; or
2. a full jacketed projectile larger than .22 caliber designed and intended for use in a handgun and whose jacket has a weight of more than 25 percent of the total weight of the projectile.

[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**



RIP
one of us

posted 11 February 2010 21:44

[Hide Post](#)

Michael,
Thanks for the bullet info.
The .458 B&M PeaceKeeper Whaler might strain to do 2100 fps with 528-gr VLDs, unless the barrel could grow longer than 20". Could still be fun.

If I used aluminum bullets in the .458 B&M, it would become "The .458 B&M Green Peace Lesbian Sea Kayaker." 😊

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





Tanzan,
Sorry for the length of this response, as well as any misspellings, but especially if it makes no sense as I've not met my quota of coffee yet and the head is stuffed up today.

quote:

Originally posted by 416Tanzan:
And again, there is a question on the 338WM with 250 grains. The loads look awfully light:

quote:

Hodgdon H4350 UCC 71.0grs; CW 65.0grs = 2665fps & 3944ft-lbs @ 60405 psi.

65/71 would be a charge of only around 91.5% of usable case capacity. Either we need something slower to fill the case, like H4831, or the data isn't quite right.

Any advice, commentary?

Please remember UCC includes the powder space below the bullet *and* that space above the bullet base around the diameter of the bullet up to the junction of the case shoulder/neck junction and the bullet. To fill the full UCC requires a maximum loading that also may compress the powder to fully seat the bullet and may result in an over-pressure loading.

When looking for a temperature insensitive powder I look for a powder that fits the performance specification of the cartridge/bullet combination I seek the following:

- 1) as close to 100% propellant burnt,
- 2) a powder charge of something less than a maximum to compressed-maximum, and
- 3) a pressure level at but preferably below the CIP/SAAMI PMax (MAP) for the specific cartridge.

QL provides a percentage powder loading identified as *Filling/L.R. (Load Ratio)* and the factory setting of a 100% charge will always be slightly less than a maximum to compressed-maximum powder charge. And yes the reloader has the option of changing these settings so that a *100% Filling/L.R.* would truly result in a maximum to compressed-maximum powder charge utilizing 100% UCC; I've just never felt the need to do so as I primarily look for maximum performance at lowest possible pressure level balance.

So, going back to your original performance specification:

quote:

Barnes 250 TSX in 338WM with Hunter (looking for 2600-2700 around 60k)

and using H4350 powder as the illustration, gives the following:

UCC 71.0grs; CW 65.0grs = 2665fps & 3944ft-lbs @ 60405 psi with 99.94% propellant burnt. The Filling/L.R. is 99.8%
UCC 71.0grs; CW 71.0grs = 2891fps & 4638ft-lbs @ **81727 psi** with 100.0% propellant burnt. The Filling/L.R. is 109.0%
As you can see the 65.0 CW of H4350 met your velocity and pressure performance specifications with 99.94% propellant burnt.

And while the 71.0 CW loading meets your velocity specification it exceeds the 338 WinMag's CIP/SAAMI PMax (MAP) of 62366 psi by **19361 psi**.

Now moving to H4831 provides the following performance:

UCC 71.0grs; CW 70.0grs = 2637fps & 3860ft-lbs @ 60428 psi with 96.68% propellant burnt. The Filling/L.R. is 110.0%
UCC 71.0grs; CW 71.0grs = 2677fps & 3978ft-lbs @ 63547 psi with 97.19% propellant burnt. The Filling/L.R. is 111.6%
As you can see, while H4831 meets your velocity specification at both the 60K psi specification and the maximum to compressed-maximum 63.5K psi levels the propellant burnt is less efficient powder for both.

QL is well worth the cost; it's a great tool and one must remember it is only one of a number of *tools* required for safe reloading and optimum performance from your firearm.

Hey Boomy and Whit, I know what the aluminum boolits would be perfect for...they're perfect for shootin Michael in the 😊

next time he bends over. 🤔

😊 Just kidding Michael 🍻🍻😊

Jim 🍻

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



michael458
One of Us



posted 11 February 2010 22:06

[Hide Post](#)

Capo

You boys might as well shoot BB's as to worry about those little light bullets hitting my hard ass! I don't have but one ass or we would test it out on some of the biggest solid bullets, but I am afraid both would break, and it would only be a 1 time test! Now the head is another story, quite sure I could use that brick to bust up several good solids! I am told that it is pretty hard! 😊

RIP

Let's see--458 B&M GPLSK? 458 B&M PKW---I think I like the PKW better!

We can get 2100 fps in 20 inches without much issue I think! I am real tempted to load up one of those big HPs with the slits and put in the box!

Those are all scaled down versions of what David is shooting in his 50s at the matches.

Boomy is gonna wear me out with the Aluminum bullets! Boomy, I put in a request this morning for the scoop on the aluminum bullets. What David was using them for and so forth! Our boy Brian thinks that if we shoot a good many down the barrel might be like leading up the barrel. Might be a bit of an issue, as nothing we have takes that material out of a barrel, Hoppes #9 won't do it! So, I would just shoot a couple of brass bullets down and clean it out! Hell, that's how I clean big bores anyway, no need for nothing else!

Michael

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

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



someoldguy
One of Us



posted 11 February 2010 22:19

[Hide Post](#)

quote:

So an aluminum bullet for a 44mag would weight about 60 grains?

The only thing I have to go on is the sectional density formula. The SD for a .458" bullet of 100 grains is .068. So, using this, the bullet weights for other calibers:

.416--82 grains
.4295 (44 Mag)--88 grains
.474--107 grains
.500--119 grains
.510 (for the .50 BMG?)--124 grains

Someone else may have something more useable. They would also have to come up with muzzle velocities because I don't have a clue. 🤔

quote:

1. a projectile or projectile core which may be used in a handgun and which is constructed entirely (excluding the presence of traces of other substances) from one or a combination of tungsten alloys, steel, iron, brass, bronze, beryllium copper, or **depleted uranium** 🤖

So who's going to send Michael some depleted uranium bullets in .458 caliber? You could dub such a cartridge the .458 Nukem! 🤖

Glenn

Posts: **942** | Location: **Alabama** | Registered: **16 July 2007**



capoward
One of Us



posted 11 February 2010 22:19

[Hide Post](#)

quote:

Originally posted by michael458:
... very light loads I made one up for the 458 B&M and one for 45/70. Here they are.

**458 B&M
305 Brass HP
1305 fps Muzzle
48 yd Impact 1216 fps
16 Inches Penetration
Found Sideways
Petals Sheared at 3 inches**



**45/70
Browning 1885
305 Brass HP
1050 fps Muzzle
48 yd Impact 903 fps
13 Inches Penetration
Found Backwards
Petals Did Not Shear**



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

Michael

Looking at the bullet fired from the Browning 1885 one would have to think that the bullet turned almost immediately after impact into the mix. Michael do the witness cards give any hint of when it turned? And I'm not going to mention the dreaded TR as having any bearing upon this instability as there's no need to revisit that discussion. 😊

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

michael458
One of Us



posted 11 February 2010 23:03 [Hide Post](#)

Jim

The witness cards did not show it turning, but on this one I did cheat, I only had a card at 4 inches to catch petals if they sheared, which they did not of course. I got a little stingy with my cards I have been using so many!

As for the dreaded "twist Rates".....well I think Mr. Twist Rate left the building!

Velocity may be a factor in stability here too, as even the one fired from the 458 B&M lost it's stability at the end also Twist, and velocity a factor.

All other Noncons fired at velocity in the B&M were all found dead straight nose forward. The only brass NonCon that I have tested that loses stability at the end on a regular basis is the 330 416 in the 416 B&Ms. Penetrates to 19-20 inches straight, then it loses stability and is sideways an inch or two beyond. Which is of no consequence at that point anyway.

Depleted Uranium Cores, yeah man, send them on, we will test them!

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 11 February 2010 23:42 [Hide Post](#)

Maybe you should follow Hornady's lead and put a gummy bear in the cavity to ensure expansion

[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 11 February 2010 23:48 [Hide Post](#)

quote:

Originally posted by someoldguy:
The only thing I have to go on is the sectional density formula. The SD for a .458" bullet of 100 grains is .068.
So, using this, the bullet weights for other calibers:

- .416--82 grains
- .4295 (44 Mag)--88 grains
- .474--107 grains
- .500--119 grains
- .510 (for the .50 BMG?)--124 grains

Someone else may have something more useable. They would also have to come up with muzzle velocities because I don't have a clue.

Glenn you're pretty close with weights. Michael already has a 380gr .500 SST HP Copper Solid that is of slightly different in profile but same overall length as the 100gr .458 SST HP Aluminum Solid; using that bullet as the base QD/QL computes that it'll weigh 121grs which, unless we hear differently from David, should work sufficiently for these purposes.

Here's what I come up with:

121gr .500 SST HP Aluminum Solid
Model S&W 500 Revolver - with 8.375" barrel
500 S&W Magnum cartridge
UCC: 42.9grs, CW: 36.0 = 2832fps & 2155ft-lbs @ 60745 psi (Filling/L.R.: 92.0% and 99.96% Propellant Burnt)

Edited to Add:

Oops, forgot this one...:

121gr .500 SST HP Aluminum Solid
Model 70 Super Short Magnum Action - with 18.0" barrel
50 B&M Super Short
UCC: 51.1grs, CW: 41.0 = 3340fps & 2997ft-lbs @ 60900 psi (Filling/L.R.: 87.9% and 100.0% Propellant Burnt)

Jim

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

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

boom stick
One of Us



posted 11 February 2010 23:55

Hide Post

Somebody please try this!!!

quote:

Here's what I come up with:
121gr .500 SST HP Aluminum Solid
Model S&W 500 Revolver - Standard Compensator - with 8.375" barrel
500 S&W Magnum cartridge
UCC: 42.9grs, CW: 36.0 = 2832fps & 2155ft-lbs @ 60745 psi (Filling/L.R.: 92.0% and 99.96% Propellant Burnt)

Jim... what about the flat nose solid no hollow point weight?

Since we are only talking about 50 yard shooting with a wheel gun these numbers are impressive.

[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**



Warrior
One of Us

posted 12 February 2010 00:26

Hide Post

Michael,

1. Yes Michael I agree that the GSC-FN is one of the top Solids available. However bulletsmiths may compete with each other and claim that theirs is actually the best or is better in this or that respect. Luckily, I do not have to make that call and motivate why. However you could see almost instantly when I posted the Rhino Solid Shank bullet how jealous Gerard got when he saw the competitions bullet and accused me of having ties with them ... that was a cardinal sin on my part. 😊

2. My Custom Solid (**SF = 1.75**) have been tested first in a wetpack and then on kudu, and I could not fault it. However, I do not claim that it is the best, but simply that it worked well in my application. Interestingly enough, since we have professional jealousy, we can ask the question ... do I prefer it over the Rhino Solid in the 9,3? The answer is yes !!! And this may come as a shock to Gerard.

3. Back to penetration with Solids here is yet another example of real results on game. Kobus du Plessis designed his own version of a Solid - with a roundish ogive, but with a reasonable meplat. Done so for trouble-free feeding in most rifles without the hassle of tinkering. I have actually published the photo before relating to the .308 Impala FN Solid bullet. It is a 170 gr bullet, made from free cutting brass, shot in his 30-06 Spr @ 2,690 fps with a barrel twist of 10 inches.

4. Unfortunately, the next question would be, and an interesting one at that ... what is the SF value? **The answer is 1.26 !!!** Yes, that is right. The 30-06 Spr is a "faster" caliber than the "slower" 9,3x62 for one, and in addition, the critical SF specification of greater than 2.0 or 2.5 for faster calibers is not met here as punted by Gerard to achieve reliable straight-line penetration. The point here is that we need to get to grips with slower and faster calibers, and there might just be a mere 200 fps difference between them 2 categories of so-called slow and fast. 🤔

5. Kobus tested the bullet on a number of Impala to satisfy himself and found that the bullet has not veered off track or tumbled. In fact no single bullet has been retrieved so far. The results can be seen here:

<http://forums accuratereloadin...621052911#2621052911>

Could we say that the bullet is working well despite a SF of 1.26?
Well Kobus assures me that he is happy and will report when or if one tumbles.
I am sure Koos Barnard of Man Magnum may just report on it shortly ... watch the press.

Warrior

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



capoward
One of Us



posted 12 February 2010 00:57

[Hide Post](#)

quote:

Originally posted by boom stick:
Somebody please try this!!!

quote:

Here's what I come up with:
121gr .500 SST HP Aluminum Solid
Model S&W 500 Revolver - Standard Compensator - with 8.375" barrel
500 S&W Magnum cartridge
UCC: 42.9grs, CW: 36.0 = 2832fps & 2155ft-lbs @ 60745 psi (Filling/L.R.: 92.0% and 99.96% Propellant Burnt)

Jim... what about the flat nose solid no hollow point weight?

Since we are only talking about 50 yard shooting with a wheel gun these numbers are impressive.

Boomy if you're wanting a FN solid I'd recommend JP's 450gr .500 SST FN Shredder Copper Solid design which according to Michael is devastating on pigs and such animals.



Now this is a true WAG here but I'm thinking with the increased length and lack of HP that this would equate to....an 138gr .500 SST FN Shredder Aluminum Solid...so here we go:

Model S&W 500 Revolver - Standard Compensator - with 8.375" barrel

500 S&W Magnum cartridge

Hodgdon HS-6 Propellant

UCC: 40.9grs, CW: 34.0 = 2652fps & 2156ft-lbs @ 60534 psi (Filling/L.R.: 91.0% and 100.0% Propellant Burnt)

And:

Model 70 Super Short Magnum Action - with 18.0" barrel

50 B&M Super Short

Hodgdon HS-6 Propellant

UCC: 49.1grs, CW: 39.0 = 3124fps & 2990ft-lbs @ 61863 psi (Filling/L.R.: 87.0% and 100.0% Propellant Burnt)

Or:

Model 70Short Magnum Action - with 18.0" barrel

50 B&M

Hodgdon Lil'Gun Propellant

UCC: 78.3grs, CW: 78.0 = 3627fps & 4030ft-lbs @ 51920 psi (Filling/L.R.: 103.9% and 98.78% Propellant Burnt)

And if you really want to sizzle:

Model 70 RUM Action - with 22.0" barrel

500 MDM

Hodgdon Lil'Gun Propellant

UCC: 105.6grs, CW: 99.0 = 3945fps & 4769ft-lbs @ 63601 psi (Filling/L.R.: 97.8% and 100.0% Propellant Burnt)

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 12 February 2010 01:14

[Hide Post](#)

Jim

Oh yes, you reminded me of something with the photos of the shredders. I must put one in the box with the witness cards. The witness card is excellent at showing, and then holding trauma placed, as we have seen from expanding bullets and the NonCons. I must do that with the 500 MDM.

I am not sure what I have going on tomorrow just yet, but in the next day or so I want to test the 250 Barnes TSX for Tanzan, I now have 400 Barnes Banded Solids in 416 and will run the tests Buffalo wanted to look at too. Then have some little surprises planned for you guys too!

Michael

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

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Live Outside The Box of "Conventional Wisdom"

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



capoward
One of Us



posted 12 February 2010 01:16 [Hide Post](#)

quote:

Originally posted by michael458:
Then have some little surprises planned for you guys too!
Michael

Don't know if its to much coffee or the flu medication I'm taking but I'll just say it for all. We like surprises!



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 12 February 2010 01:26 [Hide Post](#)

Warrior

I think we all have some partiality involved when we talk about some of our favorite bullets, and most likely coming from experiences we have had with them in the past. I have mine, most folks do.

We have seen many many really good bullets in the last few months and I think we are making great strides in solid bullet technology. Myself, I am rather partial to the Barnes Banded and the SSK Solids I use in my .500s. For one thing the Barnes is so easily available to me, and very reasonably priced. Now it is known, price does not determine what I will use or not use, that's a fact. But it still remains a simple thing for me to go to Midway, if it's in stock, it's at my house in two days from order. Most all the time the Barnes bullets are in stock at Midway. So.....

NorthForks are great bullets and work fantastic, but I don't think they are any better than the Barnes Banded, but they are not worse either, and I also have the GSC solids in the same category as the NorthForks! All three excellent bullets. The Rhinos that IBT sent as samples to me did very good in the tests, and they appear to be an excellent bullet also. If I was in Australia I would be shooting the NEW Woodleigh Mono, it looks really good. Another design is the JDJ designs from SSK, they are as good as any I have worked with.

And there is no one on all of AR that loves or uses solids more than I do! Hell, I am crazy enough to toss all mine in the floor and get naked and roll in them! Still looking for that photo so I can post it?



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 12 February 2010 01:48 [Hide Post](#)

You are a sick sick man Michael but I like you.

Please crop those pics well so we don't have to see more than we want to



Go Michael!

quote:

And there is no one on all of AR that loves or uses solids more than I do! Hell, I am crazy enough to toss all mine in the floor and get naked and roll in them! Still looking for that photo so I can post it?

[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 12 February 2010 02:03 [Hide Post](#)

Michael,

Brain cells aren't hitting on all electrical sockets today and I know we've discussed everything from 60% to 80% but don't recollect and am too lazy to dig through this thread to find it. So have to ask, "what has the testing settled as the optimum metaplat to bullet diameter percentage to assure maximum straight-line penetration?"

Thanks

Jim

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

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

Whitworth
Moderator



posted 12 February 2010 02:23

[Hide Post](#)

quote:

Originally posted by boom stick:
Since we are only talking about 50 yard shooting with a wheel gun these numbers are impressive.

Hey, speak for yourself!

"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**



someoldguy
One of Us



posted 12 February 2010 02:29

[Hide Post](#)

quote:

Now this is a true WAG here but I'm thinking with the increased length and lack of HP that this would equate to...an 138gr .500 SST FN Shredder Aluminum Solid...so here we go:
Model S&W 500 Revolver - Standard Compensator - with 8.375" barrel
500 S&W Magnum cartridge
Hodgdon HS-6 Propellant
UCC: 40.9grs, CW: 34.0 = 2652fps & 2156ft-lbs @ 60534 psi (Filling/L.R.: 91.0% and 100.0% Propellant Burnt)

Amazing. Those aluminum bullets just blow me away. 🤖

I would expect some decent penetration out of that .500 bullet. Not dangerous game penetration, but around 16" on the average in Michael's test medium.

Glenn

Posts: **942** | Location: **Alabama** | Registered: **16 July 2007**



boom stick
One of Us



posted 12 February 2010 02:29

[Hide Post](#)

OK 150 yard shooting for Whitworth 😊

Jeffeosso had an interesting idea of shooting the aluminum HVSP bullets at 1,200 fps or nominal wheel gun velocities to see what the affects would be in terms of would channel and penetration.

Also a milk jug filled with water and ballistic gelatin to mimic what the affects would be on game and humans.

I wager these aluminum HVSP bullets to be more deadly on humans than any conventional bullet.

Nothing to sneeze at.

[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
One of Us



posted 12 February 2010 02:30

[Hide Post](#)

quote:

Originally posted by someoldguy:

quote:

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Amazing. Those aluminum bullets just blow me away. 🤖

I would expect some decent penetration out of that .500 bullet. Not dangerous game penetration, but around 16" on the average in Michael's test medium.

+1

I think a flat nose instead of a hollow point will be better for penetration.

[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**



michael458
One of Us



posted 12 February 2010 02:39

[Hide Post](#)

Jim

It is my "belief" at this point that good things "Begin" at 60% meplat of caliber! Not optimum, as I also believe that 60% meplat of caliber NEEDS a fast twist to get it there.

The good life, where straight line penetration and meplat take over, I think is 65% meplat for caliber. The my .500s are at 70% meplat of caliber and they are very good, the Barnes Banded 458s are at 67-68% meplat for caliber and are Very good! The New Woodleigh Monos that Con sent in 458 caliber light at 400 grs as I recall were 73-74% meplat of caliber and they penetrated far more than a 400 gr 458 caliber solid should. Also right up there at the top with it was the very light 330 Barnes Banded I like so good too, again, at 67-68% meplat of caliber.

465HH and I are going to do a very serious test on this when I get the bullets in. I ordered this--45%--55%--65%--75% meplat of caliber solids to test. I think we will see where twist rates become extremely important with the 45% and 55% bullets, with the 65 and 75% meplat for caliber we will see meplat take over at that point.

Now this is totally MY BELIEFS at this point in time and takes into account all the things we have tested and worked with. But to be honest, I think I am very very close on this!

Michael

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

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



michael458
One of Us



posted 12 February 2010 03:22

[Hide Post](#)

Boomy and Boys

Give me some time, I will get the jest on the Aluminum bullets. Deal is, whatever you can think of, it can be done, solids, HPs, anything! Just some time on it is all we need. I am on it!

I checked my medium, probably get the 250 Barnes X tested in the next day or so, probably some T'Rex tests, but before I test the 416 400 Barnes Banded I need two new boxes of medium, so that is going to be first of next week for sure now. I think I will chew up what is left over in the boxes, then build two new ones for next weeks work. I have a truck load or better of already chewed up material to move out!

OK, well past dark over here, that means I am out of here going to go have sweet dreams about shooting bullets! Might even get butt ass naked and roll in some nice shiny NonCons!

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 12 February 2010 03:27

[Hide Post](#)

Thanks for all of your time and effort to try all of these things for us geeks.

Have fun with your roll in the bullets.

Just make sure to count them to make sure you did not get an accidental suppository



quote:

Originally posted by michael458:
Boomy and Boys

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[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**



michael458
One of Us



posted 12 February 2010 04:03

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



someoldguy
One of Us



posted 12 February 2010 04:22

[Hide Post](#)

quote:

Just make sure to count them to make sure you did not get an accidental suppository



quote:

Hell, I am crazy enough to toss all mine in the floor and get naked and roll in them! Still looking for that photo so I can post it?

If it was me, I would only be concerned if my wife walked in and I quickly covered up my bullets.

Glenn

Posts: **942** | Location: **Alabama** | Registered: **16 July 2007**



capoward
One of Us



posted 12 February 2010 05:43

[Hide Post](#)

quote:

Originally posted by michael458:
Jim

It is my "belief" at this point that good things "Begin" at 60% meplat of caliber! Not optimum, as I also believe that 60% meplat of caliber NEEDS a fast twist to get it there.

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Michael

Thanks Michael

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

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



8gauge
One of Us



posted 12 February 2010 10:12

[Hide Post](#)

Hi just wanted to tell u i learned allot of info from your testing. I am going to be doing some tests on 4 and 8 gauge penetration. I have been doing allot of 8 bore loading and testing. only penetration so far has been on bull American buff 2300lbs clean though @ the shoulder. 2nd also round ball went 4 1/2 ft left front to right rear ribs boiler room trapped by the hide minor deformation, and lost 15 gn. Smokeless and black load 875gn ball 1650fps. On my 1450gn conical @ 1400fps instead of a m what do you think would be opt meplat. sorry for way off your topic.

Posts: **30** | Location: **WI** | Registered: **11 February 2010**



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