

This topic can be found at:

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

RIP

07 February 2010, 22:47

Terminal Bullet Performance

Mike,

That would be .474" then, for safety in double rifles.

michael458

07 February 2010, 22:57

RIP

The IWBB is a hell of a mean looking rig! Get the wet print in the flat sided buckets I think they won't crack up as bad. Like you said, the wet print will take the shock instead of the bucket. Plenty of stress from the boards too. Will be some good tests, I look very much forward to them! Rhino boards, Heh, Far beyond T'Rex, maybe Brontos!

Mike

My last tests with the 470s almost 4 years ago were as follows;

500 gr Woodleigh FMJ

50 Yard Impact Muzzle velocity 2172 fps

20 inches straight--tumbled, turned and veered until they were found completely backwards at 26 inches total. 3 of these were done, exact same results.

500 gr Barnes Round Nose

50 Yard Impact Muzzle Velocity 2147 fps

24 inches straight-veered off course left the box at 34 inches. X3, same results.

22 inches straight-veered off course left the box at 32 inches. X2, same results.

Michael

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

The New Word is "Non-Conventional", add "Conventional" to the Endangered Species List!
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someoldguy

07 February 2010, 23:43

quote:

copper Cup Point

This is the first I've laid eyes on this bullet, but I just don't see how such a construction is a good idea. No wonder they wouldn't perform like a flat nose. That cupped nose would present more surface area to the target than the flat-nose, which logically means less penetration.

Sorry, but that's just how I see it.

Glenn

MikeBurke

07 February 2010, 23:48

quote:

Originally posted by RIP:

Mike,

That would be .474" then, for safety in double rifles.

I posted the picture of the fired bullet in the Double Rifle Forum. Even grumpy old Will said the engraving from the rifling looks good.

RIP

07 February 2010, 23:50

The Cup Point is a deep penetrating soft or a shallow penetrating solid, that stays straight-on-course.
Puts more hurt into its shorter course in a buffalo.
Not meant for elephant braining, but would work most of the time there too. 🤔
Neither fish nor fowl.
A hedge against killing two buffalo with one shot, yet capable of "Texas Heart Shots."
Yep. the Cup Point Bullet has surely "Gone to Texas." 😊

Two hillbillies walk into a restaurant. While having a bite to eat, they talk about their moonshine operation.

Suddenly, a woman at a nearby table, who is eating a sandwich, begins to cough. After a minute or so, it becomes apparent that she is in real distress. One of the hillbillies looks at her and says,

'Kin ya swallar?'

The woman shakes her head no.

Then he asks, 'Kin ya breathe?'

The woman begins to turn blue and shakes her head no.

The hillbilly walks over to the woman, lifts up her dress, yanks down her drawers and quickly gives her right butt cheek a lick with his tongue.

The woman is so shocked that she has a violent spasm and the obstruction flies out of her mouth.

As she begins to breathe again, the Hillbilly walks slowly back to his table.

His partner says, 'Ya know, I'd heerd of that there 'Hind Lick Maneuver' but I ain't niver seed nobody do it!'

Phatman

08 February 2010, 00:43



That was great



John 🍷🍷

Give me COFFEE and nobody gets hurt

boom stick

08 February 2010, 02:03

Funny joke there Rip

I have a test medium thought

would not two 3/4" high grade plywood clamped or glued together simulate the toughest of buff bone?

If so then you can see the bullet path and depth of penetration by having a few inches of some kind of water or wetpack then the plywood "Bone" then 3" of water or wetpack then the boards again then a few more inches of wetpack to simulate a broadside shot on a buff through the toughest bone.

For a tougher test set the board bones at a 22 and 45 degree angle from the flight path of the bullet to see how true it will go.

you only want a complete pass through on one buff so you dont get "Tagged" for a second one

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3" of water/wetpack then 1.5" of high grade plywood then 3' or water/wetpack and repeat the 1.5" of ply and 3" of water/wetpack.

Broadside buff simulator.

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)

Warrior

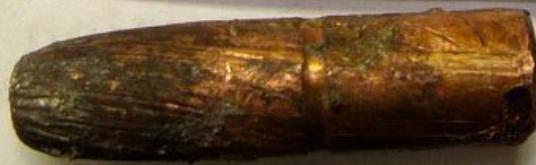
08 February 2010, 02:20

quote:

Originally posted by michael458:

Now, I did some 9.3 tests a couple of months ago, some have seen them, I posted over on my 9.3 thread on small bores, or somewhere. I am bringing them here today since I have nothing else to offer, and there may be some lurkers here that did not see them.

9.3 B&M
320 Woodleigh FMJ
Impact Velocity 2203 fps
Retained Weight 320 grs
63 inches Wet Print Mix
Exit back of 2X6 Box
Imbedded into Concrete Block
Dead Straight Penetration





Want to talk about good penetration!

Michael

The 320 gr 9,3 Wdl FMJ did extremely well for a RN design as can be seen in this photo - 63 inches straight !!!

1. Michael how would you explain that Mike's test of yesterday with his 470 Nitro Krieghoff is so much at odds with his 500gr/.474 caliber Wdl bullet? Only 23" of straight penetration, 43" total penetration, bullet shifted 5" up and 3" to the left & found sideways. The bullet make is the same, same bullet material & similar nose profile, being a RN FMJ. 63 inches vs 23 inches of straight-line penetration.

2. Puzzling - the 320gr 9,3 WDI FMJ performed even better than the 410gr/.416 GSC-FN bullet that achieved 60 inches. Let us summarize ... the GSC-FN bullet weighs more, has more velocity and it has a FN nose profile. How do you explain that?

Curious to know your take on it.

Thanks
Warrior

someoldguy

08 February 2010, 02:23

quote:

His partner says, 'Ya know, I'd heerd of that there 'Hind Lick Maneuver' but I ain't niver seed nobody do it!'



quote:

The Cup Point is a deep penetrating soft or a shallow penetrating solid, that stays straight-on-course. Puts more hurt into its shorter course in a buffalo. Not meant for elephant braining, but would work most of the time there too. Eeker



I gotcha. It doesn't penetrate as well because it's not designed to do so. OK.

Just making sure I didn't misunderstand something. 😊

Glenn

boom stick

08 February 2010, 02:26

Warrior,

If you look at the "Round nose" of the woodleigh you can see that the front of it is not round but a hybrid flat/round nose

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Warrior

08 February 2010, 02:28

quote:

Originally posted by michael458:



Michael

60 inches of straight-line penetration is good and the last 3 inches is really of no practical consequences.

However, being a FN bullet one expects it would stop point-on.

The fact that the 9,3 RN FMJ stopped point on in the wall beyond the box was amazing.

Warrior

boom stick

08 February 2010, 02:36

The 9,3 had a slight SD advantage but obviously not dump all its energy inside the box.

It would be interesting to test this blunt nose against a flat point with the same twist/velocity/S.D

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Warrior

08 February 2010, 02:42

quote:

Originally posted by boom stick:
If you look at the "Round nose" of the woodleigh you can see that the front of it is not round but a hybrid flat/round nose

Boom Stick,

Surely the .366 and .474 Wdl FMJ have very similar nose profiles with the .474 bullet having a larger meplat., which should act in its favour.

Warrior

boom stick

08 February 2010, 02:47

Close but not the same it seems

The 9,3 has a flatter front.

This is why testing at the same velocity twist and SD is needed.

Compare a true flat nose of the same weight to this blunt nose at the same velocity out of the same gun.

□ □

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michael458

08 February 2010, 03:07

quote:

Originally posted by michael458:

Mike

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20 inches straight--tumbled, turned and veered until they were found completely backwards at 26 inches total. 3 of these were done, exact same results.

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Michael

Warrior

I posted the above earlier today. I have the same basic results as Mike did yesterday with the Woodleighs, and in addition the old barnes RN in 470.

The two Woodleighs 9.3 and 470 are vastly different, in no way do they compare. And both of them are different than the .458 caliber Woodleighs, 3 totally different nose profiles. The 310 gr 358 caliber Woodleigh is very close to the same profile as the 9.3 and it also performs well, or did about 7-8 years ago in straight wet print.

Very much like different FN bullets, no two are created equal.

If my Rigby and 416 B&M had faster twist rates the GSC Solid would have most likely done better, say 1:12 or 1:10.

As far as ending up dead straight in the box, sometimes yes, sometimes no. Regardless, my .500 caliber bullets have been found 100% dead straight in the mix, or stuck in the 2X6 in the back of the box straight, I have also found them sideways at the end of penetration. I have tested 458 and 416 Northforks, lose stability in the last 1/2 inch and be sideways, otherwise 100% dead straight. That last 2-3 inches of penetration, after 60 inches dead straight is of no issue at all. Two other 9.3 Woodleighs done in the same test that day were not found? Obviously they did not take the same path as the one in the photo, they should have been only a few

inches from that one found, but they were not? So the matter is mostly moot! The next 9.3 Woodleigh might be found sideways at the end of it's penetration too? The point is and the one that counts is that it had straight line penetration before leaving the back of the box. The other Woodleigh profiles in 470 and 458 can't make 30 inches of straight penetration, nor the old Barnes RN for that matter!

Michael

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

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michael458

08 February 2010, 03:16

quote:

Originally posted by boom stick:
Funny joke there Rip

I have a test medium thought

would not two 3/4" high grade plywood clamped or glued together simulate the toughest of buff bone?

If so then you can see the bullet path and depth of penetration by having a few inches of some kind of water or wetpack then the plywood "Bone" then 3" of water or wetpack then the boards again then a few more inches of wetpack to simulate a broadside shot on a buff through the toughest bone.

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Broadside buff simulator.

Boomy

I'd rather make dinosaur mix!!!!
M

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

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boom stick

08 February 2010, 03:22

I like the fattest meplat that would feed reliably to do the most damage on solids.

What needs to be calculated is the SD of the meplat to weight NOT weight to diameter of the shank since it does not touch the animal.

If you measure the meplat instead of the shank you will get some high SD numbers.

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boom stick

08 February 2010, 03:49

LOL WHAT IS THE "DINO" MIX?
WET NEWSPAPERS AND PAVING STONES?

quote:

Originally posted by michael458:

quote:

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RIP

08 February 2010, 04:04

All y'all,

I copied that joke from an email, but it is an old one, one that I thought of first time I heard of the Heimlich Maneuver, decades ago, only my idea was better:

Hymen lick? 🤔

What? Groans and moans, booing and hissing? Not humorous?

Oh, well, back to "humerus" then, as in cape buffalo shoulder:

boomer,

I think you will need at least 5 of those high grade 3/4" plywood boards epoxied together to simulate a cape buffalo humerus ... or maybe Alf will come up with a formula, and I should not try. 😊

Maybe the 1.5":7.5" (wood to water) ratio is tougher on solids than Michael's wetpack, stops them sooner.

And maybe the 1":7.5" ratio is less resistance than Michael's wetpack.

This is using either 2 or 3 of the nominal "half-inch" cheap plywood.

Whatever the resistance, Michael's wetpack seems to be more resistance than any game animal, stopping FN solids and any softs in a shorter distance than they might travel in Texas Heart Shots or any body shots on buffalo, hippo, elephant.

Elephant skulls are about the same, unless the bullet does something funny on a tooth or tusk.

But these are just the impressions of a hillbilly.

Hymenlick Maneuver.

Letter Rip 🤔

boom stick

08 February 2010, 04:24

Ok 3" of wetpack, 5 3/4" high grade plywood epoxied together and 3' of wetpack then plywood and 3" of wetpack to simulate the toughest of broadside shots on buff.

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RIP

08 February 2010, 07:21

boomer,

The point is really not to match a buffalo body nor an elephant skull inch for inch, but rather to produce a consistent test medium in which the bullets will behave similarly to the way they do in game.

Buckets of water and sandwiches of plywood might be easier for Alf to certify the consistency, but the wetpack is more "tissue-like."

A modular system of wetpack buckets would be easier for Alf to certify as consistent.

Easier to pack, soak, and weigh as smaller units before assembly into a train.

That still assumes only one shot per bucket of wetpack.
Could create a jobs program with Obama-stash stimulus cash to do this research.
Letter Rip

someoldguy

08 February 2010, 07:49

quote:

The 9,3 has a flatter front.
This is why testing at the same velocity twist and SD is needed.
Compare a true flat nose of the same weight to this blunt nose at the same velocity out of the same gun.

Not only that, but the meplat is obviously smaller for the 9.3. However, it's obviously not so small that it won't stabilize properly. Otherwise it wouldn't have penetrated in the way it did.
My guess is also that the 9.3 has better gyroscopic stability, which is defined as:

quote:

The resistance of a rotating body to a change in its plane of rotation. The faster a body spins (the greater its angular velocity), the greater the stability of the body in its particular position or orientation. Gyroscopic stability accounts for the stability of a spinning discus or a spinning football in American football.

Source: <http://www.answers.com/topic/gyroscopic-stability>

Since rpms is given by the velocity divided by the twist rate, it's getting more and more obvious (to me, anyway) that twist plays a definite role in penetration.

Now, another important matter.

Since we are telling jokes so old that they have become new again, I have one for consideration. I think I first heard this while LBJ was still president.
This joke is more than just the standard "Bad Little Johnny" tale. It is something that AR members especially can relate to because it pertains to two things that are dear to most of us: sexual relations and the hunting of large and potentially dangerous animals. Relevant stuff, really.

quote:

The teacher of a sex education class wants the children of the class to give an example of sex in the animal world.
Little Lori raises her hand and says, "Well, my cat had kittens!"
"Very good, Lori!" said the teacher. "You know something about sex!"
Then it was Ricky's turn. "My dog had puppies!"
And the teacher praised Ricky also.
Next it was Bad Little Johnny's turn.
He thought a while. And then his face brightened.
"Daniel Boone!" he exclaimed.
The teacher was puzzled, as the rest of the class.
"Johnny, that doesn't have to do with sex! Have you been paying attention?"
"Why, yeah!" he said. "He killed a bear!"
The teacher was becoming impatient.
"But that has nothing to do with sex, Johnny!"
"Yeah, it does!" said Johnny indignantly. "Taught that bear not to fuck with Daniel Boone!"

Glenn

boom stick

08 February 2010, 08:20

quote:

Since rpms is given by the velocity divided by the twist rate, it's getting more and more obvious (to me, anyway) that twist plays a definite role in penetration.



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RIP

08 February 2010, 08:21



Glenn,
Thanks. Don't know how I missed that one!
I'll surely use it, here in Kentucky,
where my relatives on both sides landed in 1790,
Pop's side landed at Berry's Lick. 😊

10" twist on Andre's bullet above.
Humor highjacks always appreciated.

Phatman

08 February 2010, 08:46

Have you tried Hardiplank?

Back in the day I had some hardcast bullets breaking up on heavy bone.
I would test them at home on wood (even oak) and they would not fail. But later I tried Hardiplank glued up 2 inches thick and they started failing at about the same rate as I saw on game.
I guess its just harder.

Just a thought,
John 🤔

Give me COFFEE and nobody gets hurt

ALF

08 February 2010, 09:58

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boom stick

08 February 2010, 10:03

I think it is not the rotational energy but the ability to keep the bullet stable with the least a mount of frontal area. As we know a sideways bullet don't go too far.

If a bullet veers off it loses energy and might miss vitals.

quote:

Originally posted by ALF:
Someoldguy and Boomstick:

Does bullet spin influence penetration?

Let us look at it logically, if it is at all possible around this audience 😊

Using linear mechanics: (which is wrong for this problem btw)

Bullet: .458 cal
Mass: 500 gr
Linear velocity: $V = 2000$ fps
Barrel rate of twist: 1:14
In 1 revolution a point on the surface of the bullet will cover a distance of
 $.458 \times \pi = .458 \times 3.14 = 1.43812$ inches in rotation.

At the same time to bullet moves forward at a velocity of 2000 fps

As the twist rate is 1:14 we see that for every foot (12 inches) of forward travel the point on the bullet rotates 1.23267429 inches.

At 2000 fps the bullet rotates at a rotational velocity of only 205.445 fps

So our 458 cal bullet is going forward at 2000 fps this gives us a kinetic energy value of $500 \times (2000 \times 2000) / 450000 = 4444$ foot pounds of energy.

The rotational energy of the same bullet when spun is:
 $(205 \times 205) \times 500 / 450000 = 46.69$ foot pounds of energy
That means that the rotational energy of the bullet is only 1.05% that of the forward kinetic energy.

But this is strictly incorrect because we are applying linear mechanics to a rotating body.

The correct formula for Rotational energy of a spinning symmetrical body (bullet) is defined by the following formula:

$$ME_{rot} = (1/2)I\omega^2$$

where:

I = Transeverse moment of inertia of the bullet = $(1/2)mr^2$

m = bullet mass

r = bullet radius

ω is the revolutions per unit time (rpm's or rps's or radians per sec).

For rps the formula is:

$$\omega = v \times 12 / \text{twist (eg 14 for a 1:14 barrel)}$$

so for the 500 gr 458 bullet @2000 fps from a 1:14 barrel this value will be 1714 revs per sec or 102, 857 rpm

The moment of inertia of the .458 bullet is:

Cal = .458

Radius = .229 and converting grains to pounds is:

$$I = (1/2)(500/7000)(.229/12)^2 > 2 \\ = .00005404 \text{ lbm-ft}^2$$

Rotational energy is calculated as, and converting lbm to lbf,

$$KE_{\text{rot}} = (1/2)(0.00005404)(2000)^2 / 32.17 = 3.357 \text{ lbf}$$

The calculated value is only about 3.357 foot pounds of energy, that is only .755 % of the linear kinetic energy value

This is in keeping with the energy calculations of a Nato 30 cal military bullet.

The 30 cal Nato 9.5 gram bullet has a transverse moment of inertia
Of $6.0 \times 10^{-8} \text{ Kg.m}^2$

At 830 m/sec linear velocity and a angular velocity of 17100 rad/sec

The kinetic energy of this bullet is 3272 joule

The rotational energy is only 9 joule

Sellier and Knuehbeuhl show that in the case of the 30 cal Nato bullet the rotational energy accounts for only 0.003 % total energy of a bullet !

By changing the spin of this 30 cal bullet from a 1:14 to a 1:12 or even 1:10 barrel is going to squat to the values.

A few joules perhaps here and there, in rotational energy is going to mean nothing in the big picture.

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Gerard

08 February 2010, 10:43

Michael,
What is the twist rate of your 9.3B&M?

Alf,

quote:

Does bullet spin influence penetration?

Sellier and Knuehbeuhl show that in the case of the 30 cal Nato bullet the rotational energy accounts for only 0.003 % total energy of a bullet ! By changing the spin of this 30 cal bullet from a 1:14 to a 1:12 or even 1:10 barrel is going to squat to the values.

This is not what we are saying. You are right. Rotational velocity cannot work in this context. Agreed. Yes. No argument on this. Yes. Yes. Yes.

I can only presume that you are being pigheaded and wish to argue for arguments sake, so, every time you say that twist does not matter once the bullet is submerged in the target medium, expect to see the graphics above.

RIP

08 February 2010, 10:53

boomer,
Good point.

The gyro effect is not a big force, but it steers the bullet like my truck going straight down the road at high speed.

Even with no power steering, I can do it with one finger.

Likewise, my charging horse, weighing near a ton with me on him, can be guided with reins in my teeth, as I unload my revolvers at the redlegs.

My stallion is called "Bullet" and he ain't no gelding neither!
Letter Rip

Gerard

08 February 2010, 11:30

Pontificus Erroneus

boom stick

08 February 2010, 11:59

100 grain fracturing aluminium hollow points.

Great minds think alike.... Seems these aluminium bullets were used in a 45-70 already and in the 458 socom. Shoot these things 3000 to 4000 fps and it would be interesting.

The 45-70 just became a varmit CQC round!

Shoot them backwards for the biggest splash.

Maybe fill the cavity with lead for more oopmph.

□

<http://lehighbullets.com/products.asp?cat=19>

The bullet is being released for orders on 1/9/09, but stock will not be available until mid-January 2009. The intent of the 458-300 was to create a fast fracturing bullet for personal defense and CQB applications to maximize terminal effect while minimizing potential secondary penetration. Well, it almost works! The terminal performance is simply unbelievable. At 3,000fps the bullet is a water-jug-vaporizing son of a gun. The problem lies in the amount of flash generated from the fast powders used to achieve the velocity. I use 40.0gr of Alliant 2400 in a 45-70 lever gun to achieve slightly over 3,000fps which results in a muzzle flash over ten feet long. You just can not believe how fast they cover 100 yards and they have shown to be very accurate in the several guns they have been tested in. There is virtually no recoil and the above load is just a riot to shoot. The bullet is made from aluminum and to eliminate the potential for aluminum oxide formation, the bullets are coated with a dry film lube immediately after they are cleaned. Weight - 100 grains BC (actual) - I still need to measure this; however, I can state it still has a lot of steam left at 100 yards. Length - 1.100 Design velocity - 2,000-?????!!!!!! Material - 7075-T6 aluminum Sold in a packages of 50 at \$50/box. Shipping via USPS Priority Mail to the 50 states is included in the price.

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someoldguy

08 February 2010, 12:00

quote:

Thanks. Don't know how I missed that one!
I'll surely use it, here in Kentucky,

Yeah, it deserves to be revived. 😊

RIP, could it have been that "Bad Little Johnny" turned out to be president Bill Clinton from Arkansas? That's a burning question that we'll probably never have an answer to...



Anyway,

Why does everyone get so excited about the rate of spin affecting penetration? This is only the part I'm looking at:

quote:

the greater the stability of the body in its particular position or orientation. (bold text mine, of course.)

I don't really care about the rotational **energy** (or "horsepower") at all because I already know it's very small.

Here's what I'm looking at:

Do we not think a bullet continues to spin inside the target? (I'm mainly asking here. I'm just assuming that it does, otherwise there might not be stability. And evidence for this continued spinning seems to be mounting.)

PS. And where did y'all get that little symbol that looks like a set of testicles?
(I know, I know. It's an omega.)



Glenn

Bump

These need a ride in your test medium don't you think Michael?

Backwards AND forwards.

quote:

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Maybe fill the cavity with lead for more oopmph.

<http://leighbullets.com/products.asp?cat=19>

The bullet is being released for orders on 1/9/09, but stock will not be available until mid-January 2009. The intent of the 458-300 was to create a fast fracturing bullet for personal defense and CQB applications to maximize terminal effect while minimizing potential secondary penetration. Well, it almost works! The terminal performance is simply unbelievable. At 3,000fps the bullet is a water-jug-vaporizing son of a gun. The problem lies in the amount of flash generated from the fast powders used to achieve the velocity. I use 40.0gr of Alliant 2400 in a 45-70 lever gun to achieve slightly over 3,000fps which results in a muzzle flash over ten feet long. You just can not believe how fast they cover 100 yards and they have shown to be very accurate in the several guns they have been tested in. There is virtually no recoil and the above load is just a riot to shoot. The bullet is made from aluminum and to eliminate the potential for aluminum oxide formation, the bullets are coated with a dry film lube immediately after they are cleaned. Weight - 100 grains BC (actual) - I still need to measure this; however, I can state it still has a lot of steam left at 100 yards. Length - 1.100 Design velocity - 2,000-?????!!!! Material - 7075-T6 aluminum Sold in a packages of 50 at \$50/box. Shipping via USPS Priorty Mail to the 50 states is included in the price.

[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)

Alf,

people are only arguing that spin affects stability and only afterwards are we arguing that stability affects penetration.

This is not a personal issue. We all want to be as confident as practically possible that the slug we send toward a pissed-off buffalo will penetrate straight.

++ ++ ++ ++ ++

"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.

quote:

Here's what I'm looking at:

Do we not think a bullet continues to spin inside the target? (I'm mainly asking here. I'm just assuming that it does, otherwise there might not be stability. And evidence for this continued spinning seems to be mounting.)

Someoldguy,

The bullet is surely not stopping its spin abruptly when the target is encountered. How many revolutions would you say the bullet does inside an animal of say 30 inches when the induced twist was 1 in 14"? When we increase the twist to 12" and 10", how many more bullet spins can we expect in the 30 inches?

Do you support the notion that increased twist would improve in-target stability and thereby penetration, or is the only significant factor that bit when the bullet is in transition from air to target. Could you elaborate on the significance of yaw angles in this regard

as to differential yaw angles by twist rate for the 3 twists mentioned above, namely 14", 12" and 10" at say 100 yds.

The other aspect that I do not understand is that a bullet can penetrate straight in target for say 60 inches , over coming that drag for that long a distance, and then become unstable and stop at 63 inches and then we attribute this alone and alone to a twist that it is too slow for a given bullet (for example 410 gr vs 380 gr GSC-FN bullet). I am uneasy with a suggestion like this. If twist is that much of a key driver, then it should surely show its muscles earlier? We look at twist and emphasize twist but ignore the role of bullet slap as another imponderable.

Obviously in the background we have the notion that is punted that the SF must go up when we shoot a bullet, say the .375/270 gr GSC-FN bullet, in a faster caliber like a 378 Wby Mag.

Warrior

someoldguy

08 February 2010, 13:55

quote:

Posted 08 February 2010 02:03 Hide Post
Bump

These need a ride in your test medium don't you think Michael?

Backwards AND forwards.

quote:

Originally posted by boom stick:
100 grain fracturing aluminium hollow points.

Great minds think alike.... Seems these aluminium bullets were used in a 45-70 already and in the 458 socom.
Shoot these things 3000 to 4000 fps and it would be interesting.

The 45-70 just became a varmit CQC round!

Shoot them backwards for the biggest splash.

Maybe fill the cavity with lead for more oopmph.

Interesting IMO!

If the bullet were reversed, you'd have a cylinder and could use the classic SD formula ($SD=0.068$) times the impact velocities of 3000 and 4000. Dividing by 21 and 27 for the "Michael's constants," I get a predicted depth of between 8 and 10 inches for the lower velocity and 10 and 13 for the higher. (Assuming the bullet remained stable and didn't lose mass. It goes down the tubes otherwise.)

I don't know if this little simplified formula works in every case, but so far it's been somewhat successful.

Glenn

michael458

08 February 2010, 15:05

quote:

Originally posted by boom stick:
Bump

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Backwards AND forwards.

quote:

Originally posted by boom stick:
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Shoot them backwards for the biggest splash.

Maybe fill the cavity with lead for more oopmph.

<http://lehighbullets.com/products.asp?cat=19>

Boomy

Well leave it to you to do what you do best, tenacious, and persistent! That's a good thing! I missed these somehow, never paid them any attention. Some David and JD stuff. They never tell me anything! OK, now you even have my curiosity roused. I will find out this week if there are any samples of these at SSK I can get my hands on, and find out what the scoop is on them.

Michael

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

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

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someoldguy

08 February 2010, 15:23

quote:

The other aspect that I do not understand is that a bullet can penetrate straight in target for say 60 inches , over coming that drag for that long a distance, and then become unstable and stop at 63 inches and then we attribute this alone and alone to a twist that it is too slow for a given bullet (for example 410 gr vs 380 gr GSC-FN bullet).

Yeah, I don't really understand that either, Warrior. Since the spin rate of the .416 was relatively slow, the rpms could have decreased to the point where the bullet became unstable. Just a guess, though.

I'll have to ponder on the rest for a while.



Glenn

michael458

08 February 2010, 15:31

quote:

Originally posted by RIP:
boomer,
The point is really not to match a buffalo body nor an elephant skull inch for inch, but rather to produce a consistent test medium in which the bullets will behave similarly to the way they do in game.
Buckets of water and sandwiches of plywood might be easier for Alf to certify the consistency, but the wetpack is more "tissue-like."
A modular system of wetpack buckets would be easier for Alf to certify as consistent.
Easier to pack, soak, and weigh as smaller units before assembly into a train.
That still assumes only one shot per bucket of wetpack.
Could create a jobs program with Obama-stash stimulus cash to do this research.
Letter Rip

RIP

Several very good points about the IWBB. I concur. Maybe we put in for a "stimulus grant"? Get us some help! I tried to use some of the hired help I have around here last year for some of these projects, but it just didn't work out the way I wanted it to! So I would just as soon do it myself and make sure it was right.

Michael

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

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RIP

08 February 2010, 18:54

What is funny is all this talk about the front surface of the bullet being the only wetted part in initial penetration. Yet once the leading edge of the nose crosses through the epidermis of the critter or the gelatin block, it is suddenly in a medium 1000 times denser than air?

Could the temporary cavity be 1000 times less dense than air? Almost a vacuum?

There is cavitation and the bullet continues spinning, clearly seen on high speed video closeups of bullets passing by inside the puffed up gelatin blocks.

Sure, at some point along the wound, more than the meplat of the bullet is wetted. But gyro stability is still helping steer past the epidermis puncture.

These things all happen in time measured in microseconds, fractions of a millisecond, but that is a working lifetime to a bullet.

The angular momentum may be small.

But think how hard it is to instantaneously cancel it out. Impossible.

Just as hard to instantaneously impart that spin as it is to instantaneously stop it.

Micro second corrections may be magnified into milliseconds of straight penetration.