

This topic can be found at:

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

Todd Williams

23 March 2012, 02:11

Terminal Bullet Performance

It's a mystery for sure. I just got both of my doubles back out about an hour ago to check this one more time.

The Merkel 140 500NE. Neither the CEB BBW#13 Solid or Non-Con contacts the rifling of the barrels. Tried all the remaining rounds I have loaded at this time, about 30 of them. None caused any issue closing the action and none of the bullets had any marks on them after taking them out of the chambers.

The Chapuis UGEX 9.3X74R. Same as the 500NE described above.

I've loaded all these rounds to the same depth, seated just below the top band. Something is certainly strange however. Several guys with multiple guns each having the same issue. Makes for a real head scratcher, eh?

McKay

23 March 2012, 02:33

I'm not as upset as Dave. Actually I am not at all upset. I love these bullets but I am just going to change the dimensions a little here and there to fit my needs better. They shoot great and I am planning on smacking another elephant with them next spring. Just don't like the long nose projection out of the case and want more crimping room is all. Ya'll do what ever you like. I'll get my own bullet runs made and all will be Hunky-Dory.

Mac

RIP

23 March 2012, 09:35

Unsolicited bullet arrival:

Thanks, Doc M.

I am your pet charity, eh?

.500-caliber/400-grain ESP Raptor bulleta: weighed one piece and got 399.7 grains for the brass.
Stubby plastic tip insert weighes 11.7 grains.

Will get a load worked up in the 49-10.

Should be interesting. 🍷

capoward

23 March 2012, 09:58

quote:

Originally posted by RIP:

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Stubby plastic tip insert weighes 11.7 grains.

Will get a load worked up in the 49-10.

Should be interesting. 🍷

Pictures? Pictures get lost?

Jim 🍷

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

John Wayne

RIP

23 March 2012, 10:17



FALON W
.500 CAL

399.79 + 11.079

photobucket





I have a 3.8 " magazine and a 3.6" magazine, 49-10 aka 12.7x68mm Magnum.
Should be able to work up a good load with Benchmark.
Load data should be interchangeable with the 500 MDM. 🤔

capoward

23 March 2012, 11:22

Nice RIP... Thanks for the photos. You should be able to use the High BC Tipped Raptors in both of your rifles. And Dan's new Mid-BC Tips, once available, will do for the rest of us.

Jim 🤖

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

michael458

23 March 2012, 15:59

RIP and Capo

Sent out some of these to the both of you Monday to give them a try in your rifles as well. I have not had time to mess with them in the 50 B&M, but the 500 MDM does not like them at all. I have a batch of 350 gr .500 Raptors coming today to start working on tomorrow. Received the 19 inch 500 MDM back yesterday, time to get it ready to go April 3 and I think with the new 350 Raptor. We will find out.

Give them a go and see how they do for you.

Michael

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

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

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michael458

23 March 2012, 16:07

Dave

Very sorry you are having such an issue with the bullet in your rifle. I hate to jump on this as I know your passions, however there just are not any issues such as this with anything else. Never even heard of this in a bolt gun, none of mine regardless of caliber. You and Mac are the only ones I know of. Many others have had no issues in doubles as well. You have no issue in the left, but only in the right, it's the rifle buddy, not the bullet. I can't see it any other way. I think you are bumping the bands and or the mouth of the case. First thing I would try is to shorten a case by a good margin and load a dummy, making a shorter overall cartridge and see what happens at that point.

Now I could be full of crap, since I am just thinking of it, and don't see it in front of me. I might be off base by a long shot, just don't know for sure by

the way you are describing. Shorten the case, by as much as a 1/2 band width on the bullet and see, bring overall length down.

Just curious to see what happens.
Michael

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416Tanzan **23 March 2012, 17:10**

RIP and Capo,

Wow, what a priviledge.
The mantle is on you guys to find some good loads for 400 grain Raptors in .500". It would be nice to see some sub-MOA pictures for that bullet. happy shooting.

+ + + + +

"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.

RIP **23 March 2012, 18:56**

quote:

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RIP and Capo,

Wow, what a priviledge.
The mantle is on you guys to find some good loads for 400 grain Raptors in .500". It would be nice to see some sub-MOA pictures for that bullet. happy shooting.

Will have some quality time with the CEB bullets in early April.
Something for Doc M to catch up on after he gets back from the upcoming scientific expedition/SAFARI. 🙌

boom stick **23 March 2012, 19:57**

The faster twist rifles might be ok with the 400 grain .500" Raptor but I think the 350 should be best for most barrels. Michael, hope you get that 350 up and running so the baboons of Africa will be populated.

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)

416Tanzan **23 March 2012, 20:24**

quote:

The faster twist rifles might be ok with the 400 grain .500" Raptor but I think the 350 should be best for most barrels. Michael, hope you get that 350 up and running so the baboons of Africa will be populated.

Boomstick--I don't believe that there is a problem with twist and stability.
I just ran a check and put figures in as 1-14" twist, 411 grains, .500", 1.6" bullet length (just guessing, maybe shorter), 2700 fps, and got a Stability Factor of 3.596 !!

That is HUGE. Twist should not be a primary factor in the little mystery, or else we know nothing at all of ballistics. If the bullet is shorter than 1.6", then the stability factor goes even higher (more stable). Anything over 1 is expected to fly straight, and 1.3 SF is often considered an optimum first rung of gyroscopic bullet stability.

OR --- we are about to learn that if the center of gravity is too far behind center, then the stability formulae are out the window ?!

But a lot of long range bullets have a lot of lightweight nose.

+ + + + +

"A well-rounded hunting battery might include:
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capoward **23 March 2012, 21:16**

quote:

Originally posted by 416Tanzan:
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The mantle is on you guys to find some good loads for 400 grain Raptors in .500". It would be nice to see some sub-MOA pictures for that

bullet. happy shooting.

Tan,

My rifle isn't even finished yet and still awaiting delivery of the finish reamer and gauges...so it'll be some months before I'll be shooting them. I do look forward to doing so though!

The overall length with tip insert is longer than 1.6" but I'm on my iPad and the information is on my laptop so don't have the exact length handy. Not sure why but the Tipped Raptors seem to be exceptions to standard stability computations.

Jim 🤖

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

RIP

24 March 2012, 02:44

Just measured one:

411-grainer with tip: 1.585"

400-grainer without tip: 1.208"

My 1:12" twist should be sufficient.

I'll celebrate April Fool's Day by shooting them on 4-1-2012, if I don't get rained out. 🍌

michael458

24 March 2012, 03:07

I just got the 350 .500 Raptors in, I like them. But what I like the best is the NEW TIPS---exactly what we were looking for, tomorrow I will try to take photos--I am seriously under the F*****G Gun, this 500 MDM and it's new GunKote job is giving me a holy hell fit--Gunkote in the chamber, I think, and maybe even some in the barrel--yes it was plugged. I have bullets going sideways at 25, but it is getting better, chamber working its' way out, another 30-40 rounds I might have it running--BITCH---Pissed, and out of time!

New Tips are great!
Michael

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capoward

24 March 2012, 08:55

quote:

Originally posted by RIP:
Just measured one:

411-grainer with tip: 1.585"

400-grainer without tip: 1.208"

My 1:12" twist should be sufficient.

I'll celebrate April Fool's Day by shooting them on 4-1-2012, if I don't get rained out. 🍌

Finally had a chance to get on the laptop...here's the message Dan sent with the measurements:

quote:

The .500 400gr Raptor with the short tip is 1.577" and with the long tip they are 1.792". The body itself is 1.202. All of the current NonCon bodies are now obsolete and replaced with a larger cavity version to get them to blow down to a lower velocity. We have a bunch of the old versions we will be giving away when people order the new version to be used for load development but not hunting. The .500 400gr Raptor is replaced with a 350gr version as well with the larger cavity. We have the new short modified tip we will be running as well that will work in both. I don't foresee making the high BC pointy tips for any of the NonCon type bullets.

Tan here it is - 1.792" with the High BC Talon Tip. I haven't had a chance but will try to identify the balance point of the 400gr Raptor without and with the discontinued short flat tip.

quote:

Originally posted by michael458:

I just got the 350 .500 Raptors in, I like them. But what I like the best is the NEW TIPS---exactly what we were looking for, tomorrow I will try to take photos--I am seriously under the F*****G Gun, this 500 MDM and it's new GunKote job is giving me a holy hell fit--Gunkote in the chamber, I think, and maybe even some in the barrel--yes it was plugged. I have bullets going sideways at 25, but it is getting better, chamber working its' way out, another 30-40 rounds I might have it running--BITCH---Pissed, and out of time!

New Tips are great!
Michael

This is definitely great news!!! Can you also measure the tip length for us?

Jim 🤖

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

RIP

24 March 2012, 10:40

I just measured one of each, maybe I did not get the tip pressed all the way in, but it is close enough for my QuickLOAD work.
Done.

Benchmark, H322, and H4198 are my 3 powders.

Looks like H4198 is best with the 411-grainer.

H322 (ball powder) looks like the wonder powder for the 430-grain "MTH" copper hollowpoint. Ought to do 2700 fps in my 24"-barreled 49-10.

I'll take two rifles to the range.

One for each bullet.

Both rifles have 1:12" No.6 Pac-Nor SS SuperMatch, 24" barrels.

2 feet of barrel on each rifle: Sacrilege! 😊

michael458

24 March 2012, 16:18

quote:

Originally posted by capoward:

This is definitely great news!!! Can you also measure the tip length for us?[/QUOTE]

Best I can measure new tip it is .431 from base to tip.

Looks good, shooting today extensively to see how they do in 500 MDM.

M

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416Tanzan

24 March 2012, 16:32

Interesting.

The new tipped Raptor should be 1.633".

Are the tips still straight-coned or is there some curve added?

Happy shooting in finding your sweetspots.

+ + + + +

"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

25 March 2012, 00:54

Ok the scoop on the 350 gr ESP Raptor, .500 caliber, new W Talon Tips

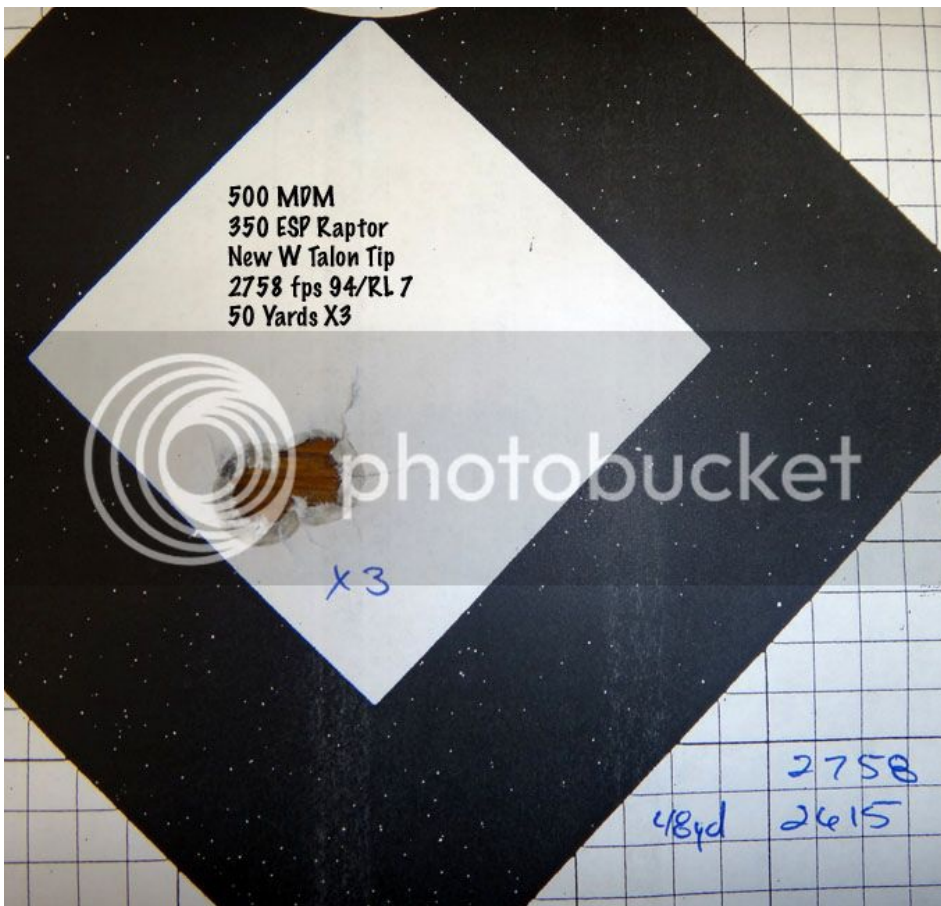


500 MDM

New W Talon Tip .500

350 ESP Raptor

With the 400 gr ESP Raptor only a week or so ago, I felt like the biggest reason it was all over the place, WOULD NOT SHOOT, was more the fault of the 500 MDM than anything else. 500 MDM is a finicky bitch! But today, shooting the very same rifle with the 350 ESP Raptor, I might have to rethink that issue. It shoots great. I can't ask for better. Do my part, it's a one hole deal at 50 yds. The group below is with the new W Tip for .500 caliber.



Love the new tip design. The photo does not do it too much justice really. Most all new tips will have something similar to this design, I think this is what we have been looking for.

Seems this is doing fine, so Monday I will proceed with a full run of terminals. Terminals with tips, no tips, solids and low velocity shear point.

Michael

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416Tanzan **25 March 2012, 01:11**

Preliminary BC, using those numbers in the corner of the target 2758 and 2615, assuming 44 yards between chronos, - - - BC .275.

With that accuracy you might not want to check out a higher velocity in the MDM. In the AccRel (shortRigby) series I would expect 2900fps with the 350 grainers. (guesstimated by 'feel' without Quickload). another plus for this level of velocity is that the 'no-shear-point' will be over 300-400 yards, depending on how the BC turns out in real tests.

+++++

"A well-rounded hunting battery might include:
500 AccRel Nyati, 416 Rigby or 416 Ruger, 375Ruger or 338WM, 308 or 270, 243, 223" --
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michael458 **25 March 2012, 01:19**

quote:

Originally posted by 416Tanzan:
Preliminary BC, using those numbers in the corner of the target 2758 and 2615, assuming 44 yards between chronos, - - - BC .275.

Tanz

That's pretty close to what I get also at .289

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

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416Tanzan

25 March 2012, 01:30

And using .280 as BC, 2760fps, 361 grain Raptor, 2" high sight-in at 100 yards, yields
-10" low at 300 yards, with 1918 fps remaining velocity.
Stability factor is over 4.

If the BC turns out higher or there is a way to smooth out talons to raise the BC, then the drop at 300 yards could approach -7 or -8". A 436 grain Raptor in .510" and 2650fps will drop -9.5 to -10 at 300. This is not as flat as my Rigby, but it delivers almost 5000 ftlbs at 200 yards and still over 4000 at 300 yards, which wouldn't be too shabby with an exploding-tip deep-penetrating 50 calibre.

+ + + + +

"A well-rounded hunting battery might include:
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RIP

25 March 2012, 02:53

It seems bizarre that the .500/411gr ESP Raptor would not shoot well in the .500 MDM Ultra.
I never look an obsolete gift bullet in the mouth.
Will see if I can make them shoot.

Also will study up on CEB terminology and abbreviations.
I been getting my MTH's confused with my FBH's lately.
Will try to do better.
Now we must learn a new term?
The "W" Talon Tip for the ESP's?
OK.
Is an ESP with a W tip still a Raptor?
Was the old tip a "V" Talon Tip?
Short tip, long tip, intermediate length tip ...
Are they all going to have the new "W" shape.
Is this new shape described as
conical
cylindro-ogival
cylindro-concoidal?
Is that ogive on the "W" Talon Tip a Tangnt ogive or a secant ogive? 😊

The new "W" Talon Tip is a conical tip that sits on top of the cylindro-concoidal-hollowpoint-boattail?

I better go study the CEB website ...
Did George Bush have anything to do with the "Dubya" name of this new Talon Tip?
It certainly is a more ballistic shape ...
Did Carl Rove or Dick Cheney have anything to do with this?

boom stick

25 March 2012, 03:09

Looking forward to the testing.
I bet that 350 will be sweet in all the other .500" club like the 50 super short, 50 BM AK 500 S&W ect.
Betting the 300 grain 458 will be the most popular big bore raptor.
What will the 416 weigh? 250 grains? 3,200 FPS from your 416 Rigby?
Coyote hunt with your 416 Rigby.

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)

boom stick

25 March 2012, 03:28

The alphabetical lettering is more of a item number than a descriptive delineation. For example to differentiate between the 308 and 338 tips if I got that right. Some calibers will have a few letters to destinguish between the types o tips available. I think that's right. Correct me if I'm wrong.

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)

capoward

25 March 2012, 05:19

quote:

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quote:

Originally posted by michael458:

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Tanz

That's pretty close to what I get also at .289

Michael and Boomy - I believe we have a winner with this Short Tip Talon design! Way to go Dan!!! I have an idea that 'W Talon Tip' relates to a .500 caliber tip.

Yep .275-.289 BC is not bad at all... Hopefully the High BC 'Pointy' Talon Tip will still be available as an option for those that can use them.

RIP & Tan - per Dan:

quote:

Actually, I am not happy with the blunt tip 2nd generation tip and already have a third. We are putting the new design on the .416 Raptor tips to see what it looks like and how it shoots. It has an effective Meplat of .2 calibers with a large corner radius tangent to the 13° and through a point on the Meplat at .2 calibers. The radius will run approximately 1/2 up the tip. ...

RIP I have no idea how this fits with your laundry listing of descriptions.

Jim 

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

John Wayne

michael458

25 March 2012, 15:59

quote:

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Preliminary BC, using those numbers in the corner of the target 2758 and 2615, assuming 44 yards between chronos, - - - BC .275.

With that accuracy you might not want to check out a higher velocity in the MDM. In the AccRel (shortRigby) series I would expect 2900fps with the 350 grainers. (guesstimated by 'feel' without Quickload). another plus for this level of velocity is that the 'no-shear-point' will be over 300-400 yards, depending on how the BC turns out in real tests.

Tanz

Raptors are not typical predictable bullets. First thing, right now, I don't have time to research other powders, which means faster powders in the 500 MDM. The 350 Raptor with 96/H-322 tops out at 2686 fps at only 52000 PSI. Well case capacity is far more than 96 grs of anything, however the thing with the Raptor is that if you seat the bullet into the case so as to use the tipped version in the magazine, it's deep. Being a BBW#13 Solid on the bottom end, that pushes powder outward and away from the bullet, and at 96 grs seated to use the tip in the magazine, I get Case Bulge--Not one more granule can possibly go in the case, or it bulges it so much it will not chamber.

Drop to 94 gr RL 7, no case bulge seated for the tip and use in the magazine. Gives me 2750, shoots great, no issues and for now probably end of story. Oh for sure I could get a typical seated 375 North Fork or 350 BBW#13 to over 3000 fps before running to max pressures in the 500 MDM, but there are factors involved that go beyond that one point.

In the 50 B&M, 350 Raptor seated to work tips through the magazine, I can only get 2335 fps in it's 18 inch barrel. Well, I can run the 345 BBW#13 NonCon to 2600 fps without issues nor even close in pressures. But not the Raptor. Can seat it out further and use it as a NonCon, or single load tipped and get that, but not seated to where it will take the tip and work through the magazine.

In my .500s the 350 Raptor has to be seated .750 inside the case to work magazines with the tip added. The 345 BBW#13 only has .390 in the case, that is a big difference. Compression with the Raptor and its BBW#13 Solid pushes powder outward, against the walls of the case--not going to compress a Raptor very much before you get into bulged cases.

After seeing what I did yesterday, I don't think a 400 gr Raptor is going to stabilize in 1:12. Maybe I am wrong? I think it will in 1:10 or faster. RIP will find out how they do in his 1:12 also. The 400s take up way too much case capacity in my 50 B&Ms to even worry with.

As do the 375 .474 Raptors in my 475 B&Ms. They have 1:10 twists and do shoot the 375, but they take up too much case. 325 .474s will fit the ticket, just as the 300s do in .458.

You better consider what I am saying here as you still want a 400 or over in .510, what is your twist rate? 1:10? If so, probably work. More than that, I doubt it. I would do 375s in .510, most of those twists are slow--1:15 or slower. My own 510 Wells is 1:15, I am very sure it won't do a 400 proper. Raptors even defy NonCons--A step beyond even the Non-Conventional!

Michael

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michael458

25 March 2012, 16:09

RIP

Yes, lot's of "letters" Numbers and so forth. Tips for the various calibers in BBW#13s and Raptors have letter designations to keep up with them. W Tips are for all the .500s. D tips are 338 caliber, R tips are 416 and so forth and so on, I can't even remember all of them. Also, when we make a change to a bullet, such as now all the .500s and .510 caliber NonCons and Raptors are getting a new wider cavity to lower shear velocity points. All the old ID numbers are discontinued, new numbers designated so as to not confuse things in the future. And, to make sure that you know what you have just in case you have obsolete numbers. Letters so far have not been changed, but the numbers are for any bullet change. Then the numbers on the end might designate as well LG--Lever Gun--SS- Super Short--NE--Nitro Express.

Now the other stuff, like MTH and FBH, I don't have a clue, not my cup of tea so I know nothing about those.

ESP is always Raptor--Enhanced System Projectile--ESP Raptor

Dan came up with the tips after having time to study and I think he has even made another change on those, I have not seen yet. ????? I leave the tips to Dan, that's his part.

Boomy,

These 350 Raptors will only be useful in the 500 MDM on my .500s, the others they take up too much case capacity to be of worthwhile effort. 50 Super Shorts are totally out. The 50 B&M AK only as a NonCon, and we have better than those with the LG NonCons. Raptors are,,,,,, Well a little

different!

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25 March 2012, 17:54

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Your notes are all carefully considered.

FTR--my 510" (500AccR) is 1 in 12" twist. McGowen barrels even thought that was too fast and suggested 15" but I stuck with 12".

Perhaps some of us will opt to put the tips on a 'standard' flatbase non-con. Will they be interchangeable and fit in the non-con?

+ + + + +

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capoward

25 March 2012, 20:40

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Perhaps some of us will opt to put the tips on a 'standard' flatbase non-con. Will they be interchangeable and fit in the non-con?

It won't help you .510 boys...but anyone wanting a .500 barrel can now purchase a 9" twist rate from PAC-Nor! Many will state that's too fast a twist rate but CEB' Dan thinks it's just dandy for all of his .500 caliber bullets!

Jim 

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

michael458

26 March 2012, 04:39

quote:

Perhaps some of us will opt to put the tips on a 'standard' flatbase non-con. Will they be interchangeable and fit in the non-con?

Tanz

Yes, that is my understanding. All the same letter tips fit the same caliber NonCons. Raptor/NonCon cavities all the same.

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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michael458

29 March 2012, 14:44

TIPS---TIPS---TIPS

I suppose you guys may have noticed you have not heard much from me the last few days! Well, there is a reason for that. I have been working on something nearly daylight to dark every day for days now. All terminals.

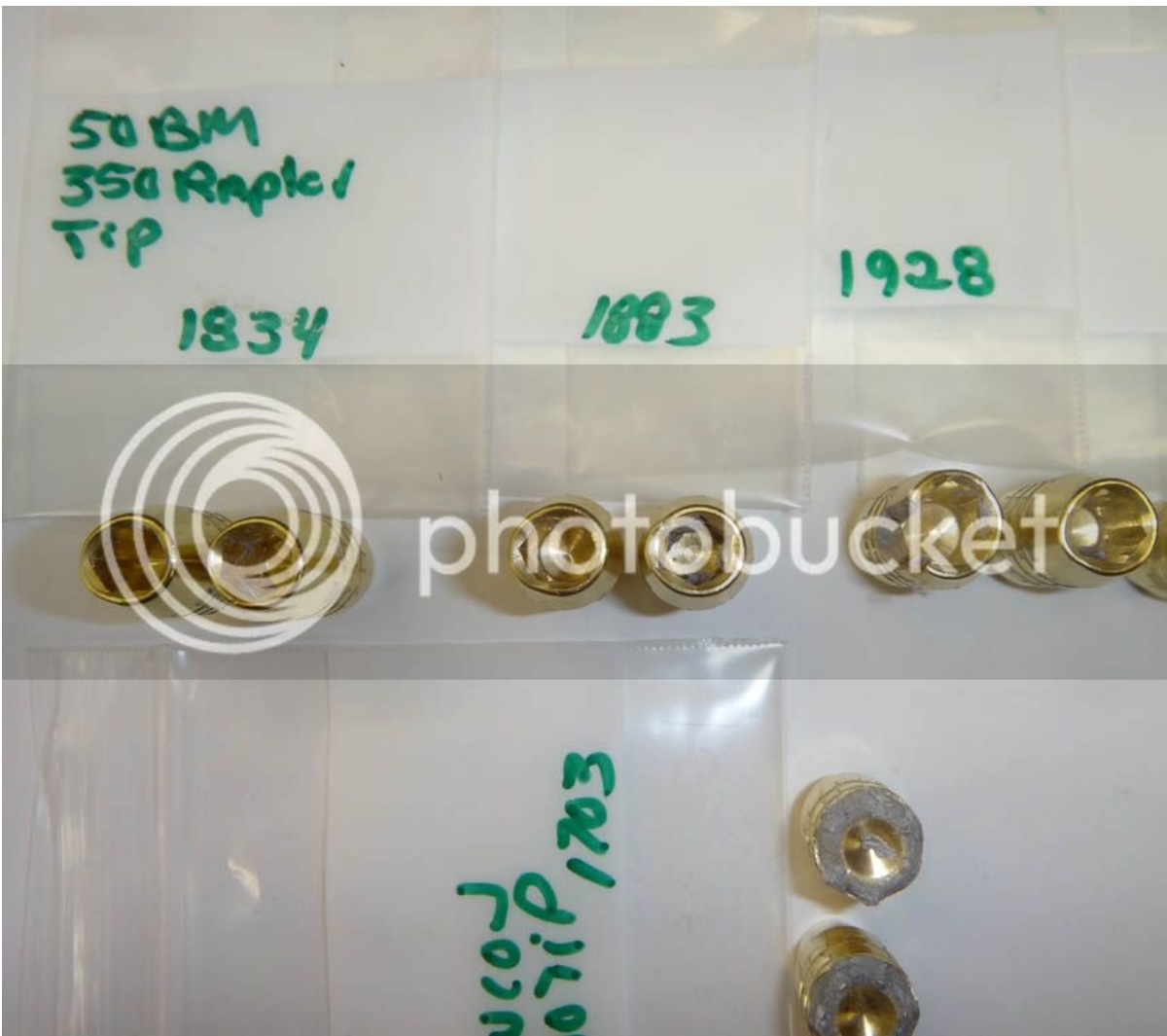
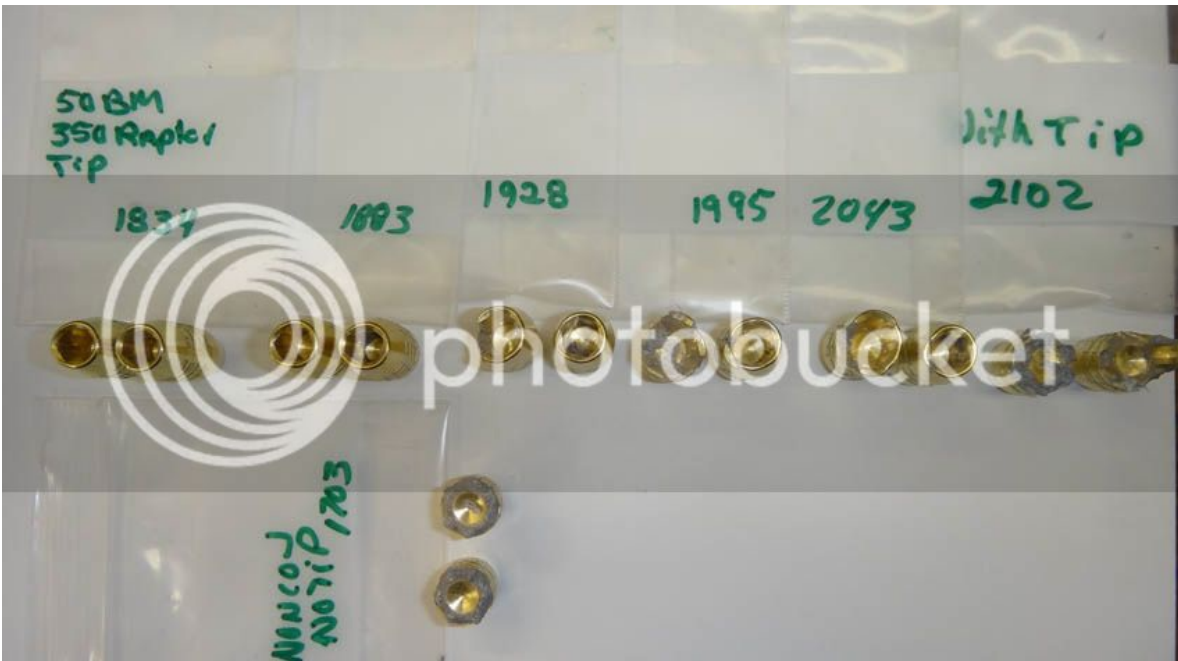
TIPS-----

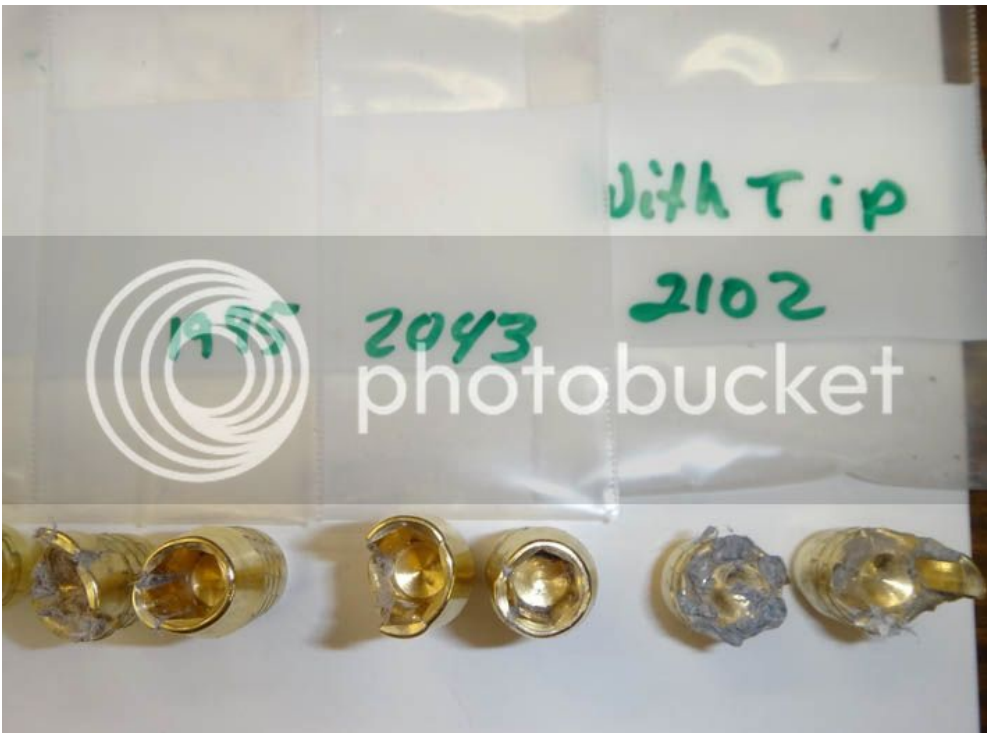
Remember those short rounded .500 W Tips?



They are not worth spit! The other day I started getting Low Velocity Shear Points with the 350 ESP Raptor-.500 caliber. As a straight NonCon--NO TIP ADDED--Great with the new wider cavity at 1700 fps low velocity shear. Well, now lets see and check it with these tips added. Big surprise, it was not until I got to 2100 fps impacts that I started getting shear! This is 400 fps faster before getting bullet performance---NOT GOOD!

In each case when impacts were under 2100 fps the bullet would tumble and was almost as bad as a Round Nose Solid! No Stability at all! In one test the bullet ran out the top of the box and busted the hell out of the lights above it--big mess! From the photos below you will see in most of the cases the tips ripping out the side of the HP Cavity, while tumbling around in the test medium.





This was not good at all. Far too much difference in Low Velocity Shear 1700 fps as a NonCon--2100 fps With the W-Tip.

I had not done much work at Low Velocity with any of the tips. It was time to check this out much further and start digging. So I went to the 458 and the 9.3 in which I had plenty of other bullets to work with, and plenty of those newer short flat meplat tips.

Next-----

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michael458

29 March 2012, 15:04

TIPS--TIPS--TIPS

Moving to the 458 B&M and only having a few of the 300 Raptors left, I gave them a go at lower velocity with the flat meplat tips.

First, as a NonCon I established Low Velocity Shear at 1850 fps when testing a week or so ago.



Now with the flat meplat short tip I was not getting consistent shear at even 2000 fps.



Nearly out of the 300 ESP Raptors I moved to the 295 BBW#13 NonCons---I had plenty of those. Same Cavity so the short flat tips fit without issue.

Establishing the Goal---Tested as a NonCon No Tip Added. 1700 fps Impact perfect Shear.



Now with the Flat Meplat S-Tips for 458s it was ugly, at 1950 fps no shear at all, bullets unstable as the tips were not breaking up.



There was much consultation between Dan and myself about this and the conclusion we came to was that when we moved into the big bore tips to begin with, the LONG POINTY TIPS--they were not so bad and worked a bit better--These new tips being shorter, big bore, and more to them were much too tough, not breaking up like the smaller bore tips were. The Big Bore Tips are bigger and tougher than the small bores, not fragile enough. The longer tips seemed to work better, they were longer, more fragile. I had some of those, so tried them out as well.



Indeed the LONG TIPS began to breakup at lower velocities than the tougher shorter tips. Those shorter tougher tips would not breakup before causing the bullet to go unstable and tumbling. How to make the tips more FRAGILE--This is going to be the key to this working. These big bore tips have to be made more FRAGILE so as to breakup faster when starting penetration allowing the NonCon to work as designed. They are not doing that now.

We talked about drilling a hole in the tip. Of course here I don't have the equipment or the skill to drill proper centered holes--But I could not wait, and did it anyway!

**458 B&M
1:14 Twist Rate
3/27/2012
295 BBW#13 NonCon
Short Large Meplat Tip
With .090 Hole Drilled into Cone
Muzzle Velocity 2074 fps
48 Yd Impact Velocity 1957 fps fps
X2--No Shear 35" Dead Straight**



**458 B&M
1:14 Twist Rate
3/27/2012
295 BBW#13 NonCon
Short Large Meplat Tip
With .090 Hole Drilled
Completely Thru Stud
Muzzle Velocity 1947 fps
48 Yd Impact Velocity 1834 fps fps
X1--No Shear 35" Dead Straight
X1--1/2 Shear Tumbled to 15
Inches**



Well, this did change things up some. While still not shearing at lower velocity, the straight penetration of the NonCon now told me that the tips were breaking up before the bullet could go completely unstable, it was now moving forward as a solid. On one set I drilled just into the cone, the other set drilling all the way through the stud.

My drilling efforts were awful, off center, not consistent, but enough so to tell me that there was something going on, and it made a difference.

Next-----

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michael458

29 March 2012, 15:35

TIPS---TIPS---TIPS

Just after receiving the .500 350 Raptors and those rounded tips, Dan did not like the shape of that tip--so he redesigned and did some 9.3 and 416 Tips.

After much discussion back and forth the last few days we decided for sure that the big bore tips were NOT FRAGILE enough, and what to do about it. First step, I needed some of the new designed tips, with the new designed stubs to insert into the cavity, new nose shapes, and needed to make them more fragile, drill a hole in the center!

Dan next day aired those 9.3 Tips, 416 tips, and a few of the .500 tips, some with holes drilled in, some no holes drilled. I received those yesterday afternoon and went to work with them. Of course right now in my situation the 9.3 was of the most priority to me since I am using the 9.3 210 Raptor next week in South Africa. So I went to work.

OK, first we have already established that the 9.3 210 ESP Raptor with those short flat meplat tips did not shear with the tips until 2000 fps and above impacts. I had not paid much attention to the stability of the bullet below those impacts where it did not shear, and I had not bothered with Low Velocity Shear as a NoNCon alone, no tip. So the first thing I needed was the low velocity shear without a tip at all--which I think I did the day before new tips arrived.





I put that Low Velocity Shear Point at 1750 fps with NO TIP. Not bad, rather pleased with that. Now, with the Short Flat Meplat Tips at 2000 fps--that is 250 fps more velocity with the tips before getting shear--Not Good--I did not like that at all.

NEW DESIGNED TIPS FOR 9.3!



Wow, I really liked the looks of these tips! But I had no hope that they would breakup--time to go to work.

Sure enough, the new tip added without a Hollow Point was no better, going unstable before the tip could breakup.

9.3 B&M
1:12 Twist Rate
3/28/2012
210 ESP Raptor New N-Tip
No Hollow Point
Muzzle Velocity 1965 fps
48 Yd Impact Velocity 1869 fps
X2--NO SHEAR-Tumbled at 6
Inches Total Penetration 20" 1"+
Off Course



48 Yd Impact Velocity 1869 fps
X2--NO SHEAR-Tumbled at 6
Inches Total Penetration 20" 1"+
Off Course



Now it was time to try the New Tip Design, with a tiny little Hollow Point drilled into the nose of the bullet, not all the way through. SURPRISE-----
At nearly the exact same impact velocity I received a perfect shear, and DEAD PERFECT PERFORMANCE--The only difference, a tiny little hole drilled into the nose of the Tip!

9.3 B&M
1:12 Twist Rate
3/28/2012

210 ESP Raptor New N-Tip
WITH Hollow Point

Muzzle Velocity 1968 fps
48 Yd Impact Velocity 1872 fps
X2--Perfect Shear 21 Inches Dead
Straight Penetration



9.3 B&M
1:12 Twist Rate
3/28/2012

210 ESP Raptor New N-Tip
Hollow Point

Muzzle Velocity 1882 fps
48 Yd Impact Velocity 1788 fps
X2--Perfect Shear 16 Inches Dead
Straight Penetration





And as you can see, this continued right on down to 1700 fps impacts---a full 50 fps BELOW SHEAR POINT WITHOUT THE TIP--As a NonCon!!!!!!!

Here is something else of great importance--

My estimated BC of the 210 ESP Raptor NONCON--NO TIP is .133 At my starting velocity in that 19 inch 9.3 B&M at 2900 fps I have up to 175 yards before I drop BELOW Low Velocity Shear Point at 1750 fps.

With that Short Flat Meplat Tip my estimated BC is .228--I have roughly 225 yards before dropping below the 2000 fps Low Velocity Shear point with that tip!

Now the NEW DESIGNED Nose Profile of the 9.3 N-Tip my estimated BC is .322, and still considering Low Velocity Shear at 1750 fps (Conservative at this point) now my extended range before dropping below that Shear Point is 450 Yards!

Now there is almost no chance that Michael will be shooting anything at 450 yards, in fact, there is ZERO chance of that I can foresee. Not big game, not me. What now has become valuable to me is the higher impact velocities at the ranges I will or could be shooting at, from up close and personal,

maybe to 150 yards, maybe even 200, but almost surely not further. Higher impact velocities give me much better bullet performance, BBW#13 NonCons, and Raptors like velocity.

Now more work will begin today--I have to test those Hollow Point 416 tips and the Hollow Point .500 tips to see if they are FRAGILE enough to perform like the 9.3 tips. I doubt it, I think maybe the 416 tips will work, but I don't believe the .500s will. We will find out the next day or so.

Dan has been kind, I have 100 NEW DESIGN 9.3 N-Tips Next day air on the way--All With The Little Hollow Point for use in the 9.3 B&M and the 210 Raptor starting next week!

Michael

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

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michael458

29 March 2012, 15:45

TIPS---TIPS---TIPS

Very Important NOTE---

Some of you may have various designs of the tips on hand and using them now. BEWARE of their performance characteristics.

The older original LONG TIPS Pointy things, they work better than any of the SHORT FLAT MEPLAT TIPS--but they are STILL not allowing equal or even close to Low Velocity Shear points as the straight NONCON.

There is a very very good chance that at lower than shear impact velocities these bullet will tumble and be very unstable upon starting Terminal Performance. If you are using these tips any of them, I would put Low Velocity Shear Points at 2000--2100 fps, below that you may and probably will get a tumbler!

ALL MEDIUM AND BIG BORE TIPS are going to be redesigned. I am sure we have a solution for the mediums 9.3 to 416--I will be testing 416 today. .458 to .510 we will be working on upon my return.

I may get a chance to look at the 338 tips before leaving, not sure, but will try.

My feeling is that the 338s are ok, they are smaller, less robust, not strong or tough as the bigger bore tips, I think they breakup at lower velocities.

The Small Bore tips are not as much of a concern, as they are small and fragile. I did the 100 gr .264 Raptor a few weeks ago, with tips, and have a 1900 fps low end shear point with those, I doubt its much lower with the straight NONCON. But, I will revisit this later after we sort out the mediums and larger bore tips.

For a FACT--the 9.3 N-Tip is finalized at this point, and it will be going with me on this trip in the end of the 210 ESP Raptor!

That's #1 Down--The rest to go!!!!!!!!!!!!!!

Michael

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416Tanzan

29 March 2012, 17:26

quote:

Now the NEW DESIGNED Nose Profile of the 9.3 N-Tip my estimated BC is .322, and still considering Low Velocity Shear at 1750 fps (Conservative at this point) now my extended range before dropping below that Shear Point is 450 Yards!

The new tip shape is much more like I had originally imagined a tip should be.
KUDOS to DAN.

Personally, I am HAPPY to keep the impact velocity over 2100fps. HAPPY HAPPY HAPPY.
"Jus' don't throw me in that thar briar patch ..." 😊

.320 BC is still lower than I would have expected, but maybe the 416, 500 and 510 will be better.
DOES the BC IMPROVE WITHOUT THE HP hole?

A 416 bullet, 320grain, at 2900fps muzzle and .320 BC will hold 2100fps out to 325 yards.
(This loading produces 5975 ftlbs, a reasonable, below-max load in a 416Rigby.)

A 510 bullet, 425grain, at 2650fps muzzle and .320 BC will hold 2100fps out to 225 yards.
(This loading produces 6625 ftlbs, a reasonable, below-max load for 500AccR.)

I might be tempted to push this bullet to 2700 muzzle:

A 510 bullet, 425grain, at 2700fps muzzle and .320 BC will hold 2100fps out to 250 yards.

A higher BC would help get this out to 300 yard ranges.

A 510 bullet, 411 grain, at 2725fps muzzle (only 6775ft#) and .375 BC will hold 2100fps out to 300 yards.

Hopefully, the BC's will be better than .320.

What are we up against on long range bullets?

Barnes .416TTSX is .444BC . I use 2000 as my self-imposed cut-off but I haven't tested it. In any case, 2000fps gives one a 450 yard range when started at 2800fps.
Perhaps I should use a 2100fps cut off, which would be 400 yards. I may never get to surprise an eland at that range, but I would be HAPPY carrying around the capability.

For me, a 416Rigby is just a 270 that got put through a sci-fi enlarger machine.

+++++

"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.

416Tanzan

29 March 2012, 17:47

If we use 1750 as the cut-off impact we can improve the following:

quote:

A 416 bullet, 320grain, at 2900fps muzzle and .320 BC will hold 2100fps out to 325 yards.
(This loading produces 5975 ftlbs, a reasonable, below-max load in a 416Rigby.)

A 510 bullet, 425grain, at 2650fps muzzle and .320 BC will hold 2100fps out to 225 yards.
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A 510 bullet, 411 grain, at 2725fps muzzle (only 6775ft#) and .375 BC will hold 2100fps out to 300 yards.

The 416 bullet, 320grain, at 2900fps muzzle and .320 BC will hold 1750fps out to 475 yards.
(This loading produces 5975 ftlbs, a reasonable, below-max load in a 416Rigby.)

A 510 bullet, 411 grain, at 2725fps muzzle (only 6775ft#) and .320 BC will hold 1750fps out to 400 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.

boom stick

29 March 2012, 21:58

Lots of interesting and frustrating data. You have been a busy bee Michael. Deralin is a tough plastic. There should be other plastics out there that would flow better under the pressure of impact for the larger bores. Maybe a simple playing around with the tip material could help.

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)

capoward

29 March 2012, 22:15

Michael,

I have to ask..."Why was the NonCon nose changed for the .500 and .458 Raptors to give a 4th band at the nose shank junction?"

And..."Is this different Raptor NonCon nose contributing to the poor petal shear performance of these to Raptors?"

I do like the new 9.3 Talon Tip...and will especially like it if the performance holds true for the .500 caliber.

Jim 🤖

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