



Reloading the 375H&H cartridge

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This article has come about because of the volume of reloads that I have been involved with over the past eight years. Reloading so many 375H&H was because I was involved with training of Field Guides. These are the folk who would take you on a guided walk or drive in dangerous game country and could encounter any of Africa's big five, namely elephant, lion, leopard, hippo or black or white rhino.

It would be prudent to mention that charges are very few and far between as the guides are taught to be aware of areas these animals may be in and to listen also for alarm calls of birds or small mammals to warn them. Viewing these dangerous animals would ideally take place from a safe distance and to try to get the animal to be totally unaware of the presence of the group. The guides are required to qualify a six-exercise shooting assessment on a regular basis to ensure they have developed the muscle memory to chamber, mount, and fire an accurate shot should the situation get out of hand.

It is important to get that stowed away so that we can move on to the actual subject of the article.

Firstly, a little history.

The .375 H&H Magnum, also known as .375 Holland & Holland Magnum, is a medium-bore rifle cartridge introduced in 1912 by London based gunmaker Holland & Holland. The .375 H&H cartridge featured a belt to ensure the correct headspace, which otherwise might be unreliable, given the narrow shoulder of the cartridge case. The cartridge was designed to use cordite which was made in long strands – hence the tapered shape of the case, which, as a beneficial side effect also helped in smooth chambering and extraction from a rifle's breech.

The .375 H&H is often cited as one of the most useful all-round rifle cartridges, especially in shooting large and dangerous game. With bullet weights ranging from 200 grains to 350 grains, it has the necessary punch for small to medium game, as well as large, thick-skinned dangerous game. The most common bullet weight available in this calibre is 300 grains. In many regions with thick-skinned dangerous game animals, the .375 H&H is seen as the minimum acceptable



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calibre, and in many places (primarily in Africa) it is now the legal minimum for hunting such game. African game guides, professional hunters, and dangerous game cullers have repeatedly voted the .375 H&H as their clear preference for an all-round calibre if they could have only one rifle. Alaskan game guides have expressed a similar preference for brown bear and polar bear country.

Unlike many other calibres, .375 H&H Magnum rifles achieve nearly the same point of impact over a wide range of bullet weights at all commonly used distances. This simplifies a hunter's choice in selecting different bullet weights, based upon the game hunted, by requiring fewer scope or sight adjustments, which further serves to popularise the .375 H&H Magnum among professional hunters.

So, for starters we are working with a cartridge manufactured over 100 years ago and therefore of an old design. Most newly developed cartridges have a sharp shoulder and have done away with the belt. We also now use nitro cellulose powders rather than the old cordite. Look at the newer 375 Ruger cartridge case compared with a 375 H&H cartridge.



The .375 Ruger was designed to compete with the .375 H&H Magnum, yet with the advantage of having a rimless, beltless case which can function through a standard-length bolt action rifle due to a shorter overall length.

With all of this, there are many thousands of 375 H&H chambered rifles and many more people who love the cartridge and continue to use it for hunting, target shooting and fun.



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Well, if there are so many folks using it, and many reload already, why then write about it? Surely, they all know everything about it.

I also thought I knew about reloading the cartridge because I have a rifle in this calibre that I used for hunting and had reloaded all my rounds for practice, load development and hunting with no problem at all.

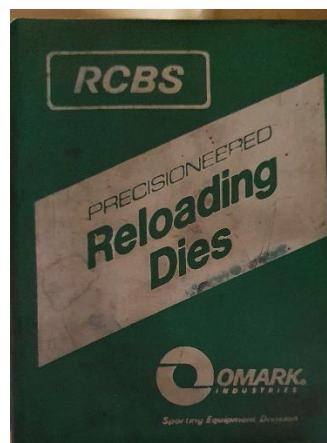
I guess when you must load more than 200 rounds at a sitting, you become less fussy because of time constraints, and yes, that was when I found that this cartridge had some major problems that needed addressing during reloading.

Most reloaders do their reloads for their own rifles and I fell into that category. That is when you can start neck resizing rather than full length resizing, right?

My problem was that I was reloading cases that had been shot in several different rifles, most of which were BRNO 602 or CZ 550 with the occasional Zastava thrown into the mix. All these had different specifications and had been worked on by different gunsmiths over their lifetimes.

Because I had my own 375 H&H rifle, I started using the reloading dies I already had. Why spend extra and unnecessary money when you don't have too?

I had a set of RCBS dies that had served me well and I still have them!



After reloading the first batch they were duly checked in a CZ 550 rifle I had recently purchased. That was when the biggest problem surfaced. Most of the



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rounds were extremely tight when cycled in the action (remember to do this with the firing pin removed from the bolt!).

On close inspection it became clear that the problem was a small area just north of the belt that had a slight bulge.

The first check was to ensure(again) that the sizing die did touch the shell holder to ensure the case was full length resized. The answer was affirmative. What then was the solution?

The solution came up after some extensive research as well as quite large expense to import from the USA. A man called Larry Willis had been faced with the same problem and devised a die specifically to resolve the *small bulge in front of the belt*.



Figure 1 Larry Willis label



Figure 2 Larry Willis die and insert

Although this made an additional step in the reloading process, its advantage was that it could be performed on already loaded cartridges without doing any damage. The insert is pushed over the cartridge and all the way down to the belt. The cartridge with attached sleeve is then pressed into the die and the very *small bulge in front of the belt* is “crimped”.



Figure 3 Willis insert on case



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This was the answer to the problem and the rounds were sent to their respective training places and used with no issues.

The die itself is pricey and although I don't hold anything against Larry for generating income, the problem we had in South Africa, is that our exchange rate is crazy and that single die cost more than a new set of RCBS dies.

Now came the time for the *ta da* moment!

It became obvious that the current resizing die was not going all the way down to the belt to be able to resize the *small bulge in front of the belt*.

The problem had to be the die itself!

An old die was modified to take off the bottom to push the die further down the case. That didn't work as the neck was also pushed back!

I don't remember who suggested trying a different die set, but whoever you are, you can have the *ta da*!

A HORNADY die set was purchased and the resizing die has an obvious sharper base than the RCBS set and goes all the way down to the belt and even resizes the *small bulge in front of the belt*.

The HORNADY die set has been used for upwards of 50,000 (yes!) and no problems have been seen regarding the *small bulge in front of the belt*.

Over time I have seen many 375 H&H cases and examined a few of them. So here is another observation of interest.



Figure 4 L to R Old Pretoria Metal Pressings, New PMP, Prvi Partisan, NORMA, NORMA nickel, Federal, Rhinish-Westphalian Explosives Stock, HORNADY, Winchester Western



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Now to look at the cases and see the belt itself.



Figure 4 Old PMP logo (small capital PMP)



Figure 6 New PMP logo (Large capital PMP)



Figure 7 No groove in front of belt



Figure 8 Groove in front of belt

Look closely at Figure 7 and see that there is no groove in front of the belt, while in Figure 8 both cases have a distinct groove cut into the case in front of the belt.

It seems that over time, the cartridge case manufacturers themselves have discovered this issue and made a change to their manufacturing process by cutting a small groove in front of the belt to resolve the problem of the *small bulge in front of the belt* caused by some rifles after firing.

In South Africa most of the cases I see are made locally by Pretoria Metal Pressings (PMP). Generally, those with the smaller PMP capitals stamped in the headstamp have no groove while the cases with the large capital PMP seem to now have the groove cut into the case. (See Figures 5 and 6 above).

Out of interest 458 WIN and LOTT cases are also belted cases and they don't seem to suffer from the same phenomenon that 375 H&H cases do. Why?



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My opinion is that they are straighter walled cases and therefore not subjected to the same “stretching” that a 375 H&H case would because it is tapered.

Now let’s look at some issues with reloaded cartridges.

Firstly, one of the more common issues found when cycling rounds and finding that the bolt is stiff to close, can be easily resolved.

The following pictures show a primer that has not been correctly seated during reloading. This is known as a “high primer”.



Figure 9 High primer top view



Figure 10 High primer side view

The above pictures clearly show that the primer has not been seated flush with the head of the case. Figure 10 shows this very clearly and if this cartridge were to be cycled, the bolt would not easily lock down completely.

Now although this is not the correct way to resolve the problem, what is being demonstrated here is that it is entirely safe to do this and to be able to use that cartridge without any more issues.

Slowly close the bolt handle all the way down to the locked position. This may require a little extra effort. When the bolt is unlocked and the cartridge is removed, on inspection you will see that the primer is now correctly seated in the case.



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Figure 11 After re-seating - top view



Figure 12 After re-seating - side view

Looking at the above pictures it can be clearly seen that the primer has now been “re-seated”. In figure 12 you can see the slight smear that the bolt made on the primer as the bolt was closed.

As previously mentioned, this is not the correct way to resolve the problem, however it is entirely safe as a primer requires a fair deal of force to make it explode and the closing of the bolt does not incur any sharp impact on the primer.

Another issue that is very common with 375H&H cases is case head separations. This is generally due to loose headspace on the rifle which allows the case to move and then stretch on firing causing the brass of the case to move forward thinning the case wall near the web of the case.

This thin area may show as a distinct line on the outside of the case. This will be seen before firing and if the case is fired, will probably cause a complete head separation where this area burns through completely. The thin spot can also be checked with a paperclip bent to make a little hook and run down the inside of the empty case. This is shown clearly in the next pictures.





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In the sequence of pictures below, one can see the thin silver line on the outside of the case.



When the case is fired, the thin wall burns through, and the case will be extracted with a split where the thin area was originally.



In certain instances, the entire case head shears off which can leave the case portion still in the chamber.



The remaining case portion can be removed either with a thin rod with a little hook on the end which can be pushed in from the action, once the bolt is removed. The hook can be moved over the mouth of the case and a gentle pull will release the case.

If this option does not work, then a cleaning rod with a jag and cleaning 2x4 wrapped around the jag can be forced into the case. This must be done with a very tight fit so that when the cleaning rod is pulled back, the case will come out.

NOTE The pictures above are to show the problem and are not 375H&H cases.



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It is extremely important to note that case head separations cannot cause any problems for the shooter as the entire case is contained within the chamber, which is made to withstand well over 50,000 psi or 3,200 bar of pressure.

Because this is a phenomenon that occurs with reloaded ammunition and relates to both loose headspace as well as multiple reloads of the same case, it is never recommended that cases that have been reloaded numerous times are loaded for walking.

Cases reloaded multiple times should only be used on the shooting range!

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