Dan Wesson Forum

Reloading Roundtable

The Basic Procedures

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Data compiled by Steve CT

Our Reloading Roundtable participants are IHMSA 80x80 (Dean), SHOOTIST 357 (Mike), lbruce (LB), and Supermagfan (Phil). These are very knowledgeable shooters, and we know how passionate they are about their Dan Wesson's. Their combined Post Total on DWF is currently 5778, over 20% of the Forum posts to date. In addition to being DWF Site Supporters, they are all Members of the Dan Wesson Collectors Association.

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Let's start with case preparation, I think the first step is to sort and inspect the brass.

LB: Sorting is subjective but simple, if it's match ammo (and I don't compete any more) I use like brand/ head stamp for a match load. Plinking ammo is a mulligan stew of brands. Any brass is discarded if cracked or show signs of damage or possible weakness.

Mike: Usually my sorting is pretty quick – I toss all my used brass in a giant bucket and start sorting by caliber, and then I sort by brand / headstamp. Unless I see obvious damage such as split necks or giant dents, I keep using them. Brass is too expensive to toss away needlessly.

Dean: I have many different loads for my guns, several are duplicate calibers, and certain brass is used for specific guns. For instance, I have a lot of .41 Magnum guns. Some use Federal brass, some Winchester brass, some nickel-plated, some Starline. If 2 guns use the same manufacturer's brass, I will keep them segregated by tumbling them in different batches.

Phil: I look for split case mouths at first glance and discard them, I also mark any cases that had an issue of any type through the previous loading and discard them as well.

Mike: The most important thing to check is your cases. They are not all created equal. The difference in internal capacity of cases between brands / lots is amazing. I've put the same amount of powder in different brand cases…. One will be at the bottom of the neck, and the other will be overflowing. This is due to different wall thicknesses of the cases. ALWAYS SORT YOUR CASES, AND WEIGH THEM IF YOU REALLY WANT ACCURATE LOADS.

Cleaning is next?

LB: Most brass goes straight in the tumbler for a few hours. I usually use corn cob but plan to try walnut as I hear it is better. I haven't tried any additive yet. If it's free range brass as in left by another shooter (doesn't happen near as much as it used to) it gets a dish soap and water bath before tumbling. Also I check for the ever elusive smaller case inside a bigger case.

Mike: Range brass is usually pretty ugly, so it gets a quick bath in dish detergent to remove any grime and dirt. Then it goes off to the Lyman turbo tumbler #1 with corncob media—this could run overnight depending on the condition of the brass. After initial cleaning it goes to tumbler #2 with cleaner media and some liquid case polish.

Phil: I run all cases through a tumbler (rock polisher) with corn cob meal and Dylan brass polisher for about 6-8 hours.

Dean: I use an RCBS or Midway tumbler with untreated walnut media. The walnut media is good for quickly cleaning dirty brass. Corn cob media will put a nice shine on the brass, but takes longer. With the walnut media, I add a little Dillon Rapid Case Polish to the new media, tumble without brass for an hour, then I add the cases. As the media gets old and dirty, cleaning time increases. Usually, when the

brass takes too long to clean, I will replace the media with new stuff. I ALWAYS tumble brass with the primers still in the pockets, that way the decapping process assures no media remains to plug up the flash hole.

Next we de-prime, size and flare. Is lube required?

Dean: For straight-wall cases, I use carbide or titanium-carbide dies for sizing, as I hate lubing cases. For many of my bottleneck cases, I use bushing sizing dies so I don't have to lube the brass. These save a lot of time and extra steps. Then there are those cases where you have to lube, and for that I use a lube pad and the RCBS Case Lube 2. This is a water soluble lube, so after sizing all the brass, I put it in a tub and rinse it well a few times with hot water. Rinsed brass is put in a Teflon 8x11 baking pan, and put in a 150 degree oven to dry the brass. That takes about 40-45 minutes. Then I can load right away after it cools down.

Mike: Wow—tons of data for this one, depending on caliber. I usually run carbide dies on all my stuff, so lubing cases isn't necessary. If I do lube, I use RCBS gel lube on a pad. I full length all pistol brass and some rifle. I set the full length dies to kiss the shell holder. My accuracy stuff in the rifle gets neck sized only. The 9mm and 38/357 are full progressive, so they get a slight flare to aid bullet seating.

LB: I have very few carbide dies so lube is a necessity, not sure which kind of lube I use but the liquid stuff on the foam pad you roll the cases on. Autoloaders usually need to be full length resized, bolt actions, revolvers not so much but it is subjective and needs to be checked for function in the firearms the ammo is for. To resize, set the die to almost touch the shell holder in the full stroke position to full length resize, you can back off to only partial or neck size. Some firearms require special small base sizing dies to get reliable function. Most dies de-prime and resize in the same stroke, a few do it in other functions. I flare just enough for the bullet being used so not to over work the brass. Bottle neck cases usually require fewer steps as the case mouth is opened on the up-stroke of the sizing/de-priming pass. Straight wall cartridges open and bell the throat on a separate operation

Dean: On pistol cartridges, or straight-wall rifle cartridges, the dies are adjusted to full-length size as per manufacturer directions. The expanding die is adjusted to just flare the case enough so that a bullet can be started. Too much flare works the brass excessively and shortens case life. For rifle cartridges, after initial die adjustment to fire-form the brass (if needed), I only neck-size my cases. I will adjust to size only 1/2 of the case neck length, whether I use the neck bushings or a normal neck-sizing die. For Contenders and Encores, my cases are oriented in the chamber with the headstamp correctly position at 12 o'clock. Then, with neck-sizing, my brass perfectly fits the chamber each time and I have no problems closing the gun without slamming it.

Phil: For all my pistol brass I use carbide dies, I hate the lube process. The 375 SM dies are not carbide since they are tapered, they require lubing. My lubing is done manually with a RCBS lube pad and the RCBS lube. All rifle cases I load are lubed in the same manner. Cleaning the lube off is my least favorite part of loading rifle cases, it requires a lot of wiping. I run all lubed cases back through another round in the tumbler.

I know case length is important. How is it checked and how do you get the right length?

Mike: Dial calipers for checking case length. I get one trimmed to proper length in the RCBS trimmer and then crank out the rest. EVERYTHING that gets crimped gets trimmed to length first (important for consistent crimps/pressure/velocity). I also deburr and chamfer the cases unless it is a pistol round that headspaces on the case neck (9mm /45 ACP).

Phil: I gauge the length of cases on rifle cartridges primarily. This is done with a digital caliber. If they are out of tolerance I trim them with an RCBS case trimmer. Deburring and chamfering is still done with a manual tool after the trimming, if you skip this step you will shave bullets and have a difficult time chambering your rounds.

Dean: After sizing and expanding the brass, I check all cases for length. The trim length I use for each cartridge is set at .0005" longer in my digital dial calipers and locked into place. Each case is then slid between the jaws. Any that won't fit through, or drag a bit are set aside to trim. For example, if I want my .357 Magnum brass trimmed to 1.288", I will set 1.2885" in the caliper. Cases are trimmed in a Hornady lathe-type trimmer or a Wilson/Sinclair trimmer set to the proper case length. Case mouths are deburred manually after trimming. On new brass, with initial preparation, all brass is deburred before the first loading.

How is the case primed?

Phil: I just prime the cases either with the priming tool in the Rock Chucker, or in most cases with a Lee hand held priming tool. The Lee is much faster, but if you are trying to prime military cases it does not work because you have to apply more pressure than your thumb or the tool can stand for very long.

LB: I clean primer pockets with a hand brush as needed. I have never deburred the flash hole but I do insure it is clear. I have learned to tumble brass before de-priming, or spend an hour poking corn cob out of flash holes (what a pain!). De-priming military brass is a pain as they glue and crimp the primers. Keep extra de-capping pins on hand as they will break from time to time. To remove the crimp I put a v shaped router bit in the drill press and go to town, it takes a light touch and you lose a few pieces but much easier than doing it by hand.

Mike: I'm picky when it comes to priming – I clean all my primer pockets. Accuracy stuff gets deburred from the inside. All primer seating is done with an RCBS hand priming tool in front of the TV! It allows very consistent primer seating pressure, and I can crank out several hundred in one sitting.

Dean: All my primer pockets are prepared when new with a Sinclair Primer Pocket Uniformer tool, then after each firing, the pockets are cleaned with that same tool. I deburr all flash holes with a Sinclair Flash Hole Deburring tool. This only needs to be done once, and I do it on all brass when new. Unless I am using the Dillon for volume loading of 9mm/45 ACP, all my primers are seated manually with a Sinclair Hand Priming Tool. This tool is superb, and gives the best feel for correct seating of the primers. The tray types are faster, but have kind of a mushy feel. It may take a bit longer, but the

Sinclair tool is well worth the time to properly seat your primers without crushing them or having them not seated deep enough.

Now we add the powder. I know that this is a critical step for accuracy and safety, but how do I know how much powder to use, how do I measure it, and how do I check my loads?

LB: Start with good loading data, several sources is best. Start middle of the road and work up or down to get the results you are looking for. I measure with a balance beam scale although I recently acquired an electronic scale but have yet to use it. I use a powder drop and check every 10th or so charge for accuracy. When developing new loads I hand weigh every charge to insure consistency. Small variances can mean lack of consistency and poor accuracy. Big differences in a charge could lead to disaster in either a possible squib load or even a blown up gun. I always eyeball the loading block of cartridges just before adding bullets to insure all cases look the same and none of them look too full or empty.

Phil: I use many different load data sources for charges of powder. It is run through a Redding powder measure and weighed about every 10 cases in an RCBS scale to ensure consistent loads.

Dean: Always consult several published reloading manuals for your cartridge. Don't use a buddies favorite load, or some internet-published load, unless you determine it is a safe load in the manuals, and you gradually work up to it in YOUR gun. Printing mistakes can and do happen...always crosscheck. Most manuals list a preferred accuracy or velocity load, you could start there. I determine what velocities I need, then use the powders that are listed for that range. Never start at the max load listed, always work up. If the powder range for a particular bullet is, say, 13-17 grains, I might start with 14-15, then work up in 0.5 grain increments. Load small batches to test, for me I will use 15-20 rounds at each weight, and prepare to have to pull bullets if it doesn't work well in your gun. I use a Redding 3BR or BR-30 powder measure with micrometer adjustment, and weigh charges on a PACT digital scale. I will check the first 5-10 loads on the scale to make sure I have the correct setting on the micrometer, then periodically recheck. Keep the scale in a draft-free area and don't bump it, or you will need to re-zero it. The Redding throws very consistent charges and once set, I have complete faith it will remain that way. If you have to add more powder to the measure, let it settle and recheck charge weights to make sure it didn't change.

Mike: I pull all my load data from a few places; experience, about a dozen reloading manuals, and the internet. All are valuable resources. I've probably got more scales/measures than any one guy needs… but there is a reason. I have about a dozen powder measures—I set them up and leave them alone. I cross check them about every 10 rounds on a digital powder scale. I also run an RCBS Chargemaster combo that is AWESOME (best investment ever). Nothing is faster for load development than the Chargemaster.

Installing the bullet into the case is "seating". It sounds complicated!

Dean: Place the bullet on top of the charged case, raise the ram until it touches, then slowly start to seat it. If there is too much resistance, you may crush the case if you continue, or shave copper from the bullet jacket. Hard resistance may indicate you haven't flared the brass enough and you will have to re-adjust your expander die. Most bullets have cannelures, so I adjust the bullet seating die to stop the bullet right in the middle of the cannelure. For those with no cannelure, as in semi-autos, slowly lower the bullet seating stem a little at a time, until the cartridge OAL (Over All Length) matches factory loaded rounds with the same bullet. You may experiment with different seating depths in your gun, but keep in mind that if it has a magazine, you won't be able to change it too much

Mike: I seat all my rifle stuff on the long side—I'm an accuracy nut. Some of my loads touch the rifling when chambered (they are loaded to accommodate for extra pressure, since there is no chance to run at the rifling). Pistol ammo takes some experimenting to get is to function properly—no two guns are ever the same. Revolver loads get seated into the crimp cannelure.

Phil: Most handgun bullets offer a crimping cannelure to determine the bullet placement, most rifle bullets do not. When loading rifle bullets I determine the OAL from loading manuals and work from there. I have learned that when loading certain bullets, the Barnes TSX to be specific, they like to be closer to the lands than others. Many times the length of the magazine will determine the maximum OAL you can achieve and still load the cartridges in the magazine.

LB: Bullet seat depth is subjective to many factors, most load data includes an overall length but proper function is the key. First it must be able to function and chamber properly. In some firearms the lead bore before the bullet engages the rifling plays in to seating depth. Bullet depth changes the case pressure as well as crimp. A lot of bullets have a cannelure or crimp groove to help locate the depth and hold the bullet.

So what is "crimping"? How and why is it done?

LB: Crimping is the act of squeezing the end of the case around the bullet. This serves to hold the bullet in place so it does not move while handling or under recoil. It also affects pressure on ignition so it affects accuracy. Crimping is not always necessary on mild recoiling firearms but a must on the big boys to prevent the bullets from migrating on recoil. I have seen this happen with hot loads in revolver and magazine fed firearms. Cartridges which headspace on the case rim must be crimped carefully to insure the cartridge headspaces properly. Most use a taper crimp for this instead of a roll crimp.

Dean: For single-shot firearms, crimping is not necessary, however, with some powders, it is still preferable, such as H-110 and W-296. I get more consistent accuracy in single-shots using these powders if I still crimp the cases. Most of my single-shots do not get crimped bullets. The lack of needing a crimp allows me to experiment with different bullet-seating depths in order to find what the gun likes best. Most guns will be more accurate with bullets seated 0.010-0.030" off the rifling. Some may prefer 0.060", others prefer actually having the bullet jammed into the rifling, but be careful with this as it will raise pressures. There are 2 types of crimps, roll and taper. Revolver cases need a roll

crimp, semi-auto cases that headspace off the case mouth need a taper crimp. You can use either, the appropriate ones are supplied in the die sets, but I have found the best crimp die to use for revolvers is the Redding Profile Crimp Die. It gives a much more uniform crimp by combining the attributes of both crimp styles together. Most die sets include a crimping shoulder on the bullet seating die. Start with making sure the crimping shoulder doesn't touch the case with the ram raised full up. Screw the seating die down until it touches the case mouth inside, them back off one full turn and lock the die. Now you are set to seat bullets with no crimp. After all the bullets have been seated, back the seating stem about 5 turns off, then lower the seating die until it just makes contact with the case. A little more and you have crimped the brass.

Mike: I crimp all my heavy loads (357 and up). I like to use a nice roll crimp to hold the bullets in place. Crimping also allows for very consistent velocities between rounds. I usually crimp the first round by feel, and when it looks right I lock the die in and load the rest. Some of my rifle loads get a taper crimp so they feed through the action smoothly—this is a must for reliable semi-auto feeding as well as some bolt actions.

Now we have a reloaded cartridge. What do we want to check for before shooting it?

Phil: I make sure that there are no splits that have occurred during the process.

LB: At this point the only thing to check is function and general appearance. I usually do this after only a few rounds are produced so not to wind up with a whole lot of ammo to pull apart or not use. Also I use mostly home cast and lube bullets so I generally keep a small rag with some WD40 on it to wipe off the finished cases as the sticky bullet lube tends to get all over the cases and attract dirt and grit (the last thing we want in our firearms).

Mike: I usually don't look mine over once I'm done—simply because I've watched every step up to this point. I do wipe off every loaded round with a rag to remove any loose powder or lube that may be on the outside.

Dean: Look for primers not seated properly or not flush with the base of the case. If any are found this way, do NOT try to reseat them...you have a loaded round that will act as a hand grenade if you try this. Pull the bullets, dump the powder, reseat the primer, and then reload the case. Sometimes a primer may be seated upside down...those tray-type seaters are notorious for flipping them over. Look for split necks, sometimes after bullet seating, necks will split on weak or old brass. Check for proper crimp, and bullet seating depth, also that the bullets are not seated crooked. Look for case bulges right under the case mouth, usually indicative of too much crimp. Also check for shaved bullet jacket material. You can brush this away, but you may have to expand your brass a bit more on the next loading.

What mistakes would a novice reloader be likely to make?

Phil: The easiest mistake to make I think would be a non charged case or if loading light loads a double charge. I use loading blocks that set all the cases in rows and make a visual inspection prior to seating bullets to make sure they all have powder and that they all appear equal in powder. Another mistake is to not have checked the correct amount of flare required to seat the desired bullet prior to having the case full of powder, you want to check this with the intended bullet at flare time, and not at the time you are ready to seat bullets.

Mike: Well, I've forgotten to put primers in, seated bullets to deep because I forgot to back out the seating stem, crushed cases in the press, forgot to flare and then crushed case with bullet…. The list goes on and I've been reloading for over 35 years.

Dean: The worst mistake is rushing...take it slow, keep ALL distractions away. Don't try to cut corners. I know how men are...if a little is good, then more should be a lot better. This approach doesn't work with reloading. A little means just that, small increments.

LB: There are any number of mistakes one can make and I have done most of them, anything from the occasional upside down primer. The crushed case left out primer, smashed bullet from the wrong seating stem. And of course the left out step in the process which makes you un-do something you already did, such as adding powder before belling the case mouth. Luckily all these are a minor nuisance and easily corrected. An absent or overly large charge can be really bad.

What else is important to know about the basic reloading process?

Dean: Use quality tools and equipment. The initial investment may seem steep and there is a tendency to want to save by substituting cheap parts, but don't do it. These tools will provide a lifetime of quality ammo and enjoyment. It is better to get what you need first, then to keep trying to upgrade later.

Phil: Keep the distractions away, it would be and is easy to forget what you just did if you are in a situation where you can easily be distracted.

Mike: Best advice—keep a log of every load you make; good or bad it is valuable data you will refer back to some day. I have 3 ring binders for every caliber that I put load data as well as targets in.

LB: The best advice I can give to someone new to reloading is to acquire several reloading books and read them. Develop your own routine, be careful, be patient, and consistency is the key.

Dean: Reloading ammunition is a rewarding pastime and a very relaxing one if you take your time with it. There is much to be gained by asking others, don't be afraid to. There is nothing better than pulling the trigger and seeing the bullet that you reloaded connect with the bulls eye, or take down that trophy animal.

Many thanks to our Roundtable experts (Supermagfan, lbruce, SHOOTIST357, and IHMSA80x80) for sharing both their time and expertise. I'm also grateful for help from freerider04, who helps me understand enough about this so that I know the questions to ask, and of course, Jody, who makes this look so great when published.

In the next installment we will begin talking about the basic equipment needed.