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Volume 10 Number 1



Technical Newsletter From
Your Ballistic Technicians
Volume 10, No. 1

How Deep Should Bullets be Seated in 9mm Cases

By Robert Treece

A caller to our tech service referenced a loading data source and was confused about the different O.A.L.'s (over all lengths) mentioned. Well, sorry, but there is no catch-all answer to that question.

All the bullet companies do have different shapes of projectiles when offering a similar product. This can change length to a degree that requires adjustment of seating depth to allow correct cycling. Load data should be adjusted because of seating depth and construction. By construction I mean that the projectiles can be made using different jacket materials, different hardness of lead, bearing surface length variations, plus different ogive angle and different base thickness. You should establish O.A.L. according to recommended guidelines of manufacturer (if available) and functioning capability for feeding the loaded round.

What is 7.62 mm? I Thought it Stood for .30 Caliber (.308")

By Robert Treece

That is half right!

I'm sure you've heard of .30 Caliber (.29999") (7.62mm) -- that refers to the initial bore that is drilled into the barrel for making one that will use .308" bullets; rifling, or grooves, are then most commonly "pressed" or cut, giving the 7.82mm or .308" groove diameter. Jacketed bullets should be the diameter of the grooves, and lead bullets normally .001" larger. If you do the math: $7.62\text{mm} \times .03937$ (a conversion # to change from mm to inches) = .29999" / hence .30 caliber and from a dimensional listing on our product catalog that also shows "7.82mm" mentioned with our .308 diameter bullets; this computes as $7.82\text{mm} \times .03937 = .30787$ / hence .308", the actual bullet diameter--good shooting!

Determining Twist

By Rich Machholz

Frequently we ask callers "what is your twist" and the response is "well I'm not sure". There is an easy solution. You can determine the twist rate of your barrels quite easily by using a cleaning rod with a tight fitting patch or brush and a Sharpie Marker. Start the moist patch on a jag and push into the barrel at the muzzle, making certain the rod rotates freely and the jag is snug in the rod. Pull the patch to near the muzzle and make a witness mark on the rod and handle so you can tell when you have achieved one complete revolution and make a mark at the muzzle around the rod. Now, push the rod into the barrel, watching index mark on the handle. When the rod has made one complete revolution make another mark around the rod at the muzzle. Withdraw the rod, watching the index mark to verify the revolution. If all goes well, one revolution will be at your first mark on the rod. All you need to do is measure the distance between the two marks on the rod and that will be one turn in twelve inches or what ever the measurement between the marks might be.

Cramming?

By Duane Siercks

No, this article is not about studying for finals but getting ready for fall hunting season. We commonly encounter callers that are trying to prepare at the last minute and we all know the frustration of "Things Ain't Workin'" syndrome. This is a good time for developing loads and fine tuning that load or changing out that old scope you have been meaning to upgrade and maybe try that "new" powder that may be just the ticket. It will be better to find out that you might have a problem or need to change things now while you have time and also while bullets, powders, etc. are readily available. Hopefully you have never been caught when your dealer or distributor has had a run on supplies due to the hunting season starting soon, but if you have, you know what I mean. Remember, if you have questions or need suggestions, give us a call at 1-800-223-8799.

Loading on Progressive Presses

By Carroll Pilant

With the need for some high volumes of ammo for IPSC, IDPA, NRA Action Pistol, and other types of shooting, many shooters have turned to progressive presses for their reloading needs. Many shooters want to go to a progressive press but are afraid to, from all the talk about double charges, no charges, varying charge weights and other problems. There are a few simple procedures that will alleviate these problems that are usually caused by poor loading techniques in the beginning. One of the main problems with people trying to operate a progressive press is the speed they try to reload. They try to run the press just as fast as they can, which in turn, doesn't give the charge bar enough time to dump powder and refill uniformly. Plus, as they rotate the case from station to station it can sling powder out of the case. In presses such as the Dillon 550, the granules of powder then get carried around by the shell plate and eventually fall into the cup for the primer seating stem and puts dents in each primer you seat. To eliminate this damage to the primer cup you should check every 25 rounds to make sure there is no residue. Double charges can be solved by using a powder that fills the case up enough, so that if you should for any reason, try to double charge a case, the powder will be at the top of the case or running over, which is a sure tip-off that something isn't right. You should notice this immediately when you are trying to seat a bullet. (If you aren't that attentive, you need to take up a hobby besides reloading anyway!). With the case 2/3 to 3/4 full with each charge, you can visually see the powder in each case, so you know your powder measure isn't clogged up and not dumping powder also. I have a rule in my reloading room, that if you ever stop the stroke on the handle for ANY REASON, such as a bullet tipped over sideways and you backed the ram up slightly to straighten the bullet, YOU DO NOT FINISH THAT STROKE, until you are sure it didn't dump a partial charge of powder. Either pull the case out (on new cases, you can look down inside while it is still in the press and see if there is any powder, the shiny insides of the case will show it) and make sure it is empty. Then you can continue on if it is empty. If it isn't, pull the case and dump the powder back into the measure, put it back in the press and continue. In some circumstances, if you stop partially through a stroke,

the charge bar may have moved over enough that it started to dump some of the powder and then when you lower the handle, it comes back and picks up a full load of powder and when you complete the stroke, you have a full load plus a partial load in the case you have just loaded. (This is once again where a powder that fills up much of the case, will tip you off that you have a problem) Pick powders that meter easily. It will give you more consistent powder charges which in turn give you more uniform velocities and accuracy. Check each of your dies to make sure they haven't backed out slightly from vibration. It is very easy for the seating die or the crimp die to back out slightly and leave you with bullets mixed in that are too long or not crimped enough. I usually box up my ammo after every 100 rounds. That way, if something did slip, you don't have 500 rounds to sort through, to see which ones were long, etc. If you keep the ram on the press clean and lubed along with any moving parts lubed lightly, this will make the effort used to operate the press much smoother and easier to operate. Keep the shell plate and areas of the press itself free and clean of powder residue and any other debris that could cause problems. If you will follow these tips, they will help give you more consistent loads from your progressive press and your press will literally last you a lifetime.

Bianchi Cup 25th Anniversary

By Carroll Pilant

The 25th NRA Action Pistol match, "The Bianchi Cup", had a surprising finale. Doug Koenig, Bruce Piatt, Kelly Gilmore and Phil Hemphill all shot a perfect score of 1920. The X count is used to break ties in such cases. You can actually shoot a perfect 1920 without a single X (It isn't likely, but is possible). This year, both Doug and Bruce both had an X count of 183 which tied them for first place. The Shoot-off to settle the tie was fired at the long range stage of the practical, the barricade, the falling plates, and the mover. Koenig won the shoot-off over Piatt. Both were shooting the Sierra 9mm, 115 grain JHP. Neither is a stranger to the winners circle at the Cup. This is the 7th time Doug has won it (1990, 1992, 1998, 2000, 2001, 2002, and 2003) and the 4th year in a row for the title. Bruce won it in 1993, 1997, and 1999. The Bianchi Cup, which is held at the Green Valley Rifle and Pistol Club near Columbia, Missouri attracted shooters from 10 different countries. It is held each year the week preceding Memorial Day weekend.

Sierra Launches New Web Site

Catering to those interested in more technical exterior ballistics data and information, Sierra launched the new web site (www.exteriorballistics.com) on June 15. Technical information from both the 4th and 5th Edition reloading manuals as well as the entire Exterior Ballistics tables from the 4th manual are present on the site. A question and answer message board will keep you informed and entertained. Technical articles from Sierra Ballistic Experts Ted Almgren and Bill McDonald as well as the Sierra Ballistic Technicians will appear periodically. Please let us know how you like this new site.



Sierra Ballistic Legend Dies

By Kevin Thomas

We were recently saddened to learn of the passing of one of Sierra's long-time icons, Martin J. (Jim) Hull. Jim was a well known figure in the shooting community, particularly among High Power and Long Range competitors. Jim began his competitive career shooting .30 caliber matches in 1949, and shot his first National Championships (Camp Perry) in 1951. He became something of a Camp Perry legend, competing in every subsequent National High Power Championship held there until 1979. During his active shooting years, Jim was a firing member on several U.S. Palma teams, won the California State High Power Championships twice, as well as most of the individual trophies awarded at the Camp Perry at one time or another. After having served as a Merchant Marine Seaman in WWII, Jim joined Sierra early on, starting in the shipping department. His interest in competitive shooting soon earned him a position in the fledgling ballistics lab, where he was responsible for the vast majority of Quality Control firing conducted in the range. Jim managed Sierra's Range Operations from 1970 until his retirement in 1989. To those of us fortunate enough to have worked with him, Jim will be remembered as a true mentor, knowledgeable in all aspects of ballistics, firearms reloading and shooting. He is survived by his wife . . . and every competitor who has ever spent a sunny day on a High Power range, from Camp Perry to Bisley. He will be missed.



Dave Coletti took this trophy 1300 pound Eland at 185 yards with the Sierra .338 caliber, 250 grain SBT in Africa this May. He used his .338-06 at 2540 fps. The bullet penetrated through both shoulders. Dave reports "Sierra is THE Premium Bullet".



Chris Crispens used the Sierra .30 caliber, 180 grain SPT ProHunter exclusively on his recent Africa trip. "Last April I went to Namibia and used this load to take six animals, all one shot kills, and my Professional Hunter was absolutely impressed and kept raving about its' performance," Chris reports. On the trip Chris took kudu, gemsbock, blue and black wildebeests, warthog, and zebra.

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