Some Tips for getting the Best out of your Silhouette C/F Revolver

By Richard Blayden

Background:

Currently, the most popular revolver used for handgun metallic silhouette shooting is undoubtedly the Freedom Arms – both for the 100 meter rim-fire and for the 200 meter centre-fire categories. And for good reason – those revolvers are well made, tough and accurate, but they are also pretty expensive and there are few alternatives other than the S&W 617 (.22) or 686 (.357 Mag) if you can find one with an 8⅜ inch barrel.

Other brands and models such Ruger, Dan Wesson and Wesson Arms in appropriate silhouette configurations have been available over the years and may be floating around the second-hand market if you can find one and the Ruger revolvers are still available and offer silhouette suitable barrel lengths in both .22 and .44 calibers.

Accuracy with a rim-fire revolver is usually a matter of testing many different brands of ammunition until you find the one that provides the best shot to shot grouping with your particular gun and lies within your acceptable price range.

With a centre-fire revolver, you have to reload your own ammunition and therefore have control over the quality and suitability of that ammunition – and that can have a major impact on the way your revolver performs. Accordingly, a shooter using a S&W 686 with top quality ammunition can often beat a similarly capable Freedom Arms shooter who is using lesser quality ammunition – and I say that from experience.

I have used my S&W 686 in both the revolver and production categories in competition on the same day and hit 40 x 40 targets in both matches. I have also been involved in revolver shoot-offs where I have hit four out of five of the half-size targets on the 200 meter rail with the same gun – maybe some luck in there somewhere but that is good grouping for a revolver of any make.

So how do I get it to shoot so well? I am a firm believer that if your shooting process is good and you are 'on the ball' on the day, then one of the key secrets is in the quality of your ammunition. Two other issues are coupled good quality ammunition, they are the 'comfort' of the revolver in your shooting hand and the quality of the sights fitted.

Whist this article is focusing on the S&W 686 and to some extent Freedom Arms (because I used to own one), I am sure that the following tips will apply to most other options for revolvers suitable for handgun metallic silhouette shooting – and in some way or another, to all silhouette handguns and reloading techniques.

Comfort / Grips:

Irrespective of the gun or type of shooting you are doing, I suspect that a comfortable grip is a core issue because an uncomfortable gun is generally hard to shoot well. All revolvers come out of the box with grips already fitted by the manufacturer but these are designed to be general purpose "one size fits all" and may not be ideal for the individual shooter's comfort and control of the gun during competition use. Fortunately there is usually a wide range of after-market grips available that may provide a better option provided the replacement grips don't put the gun overweight at gun-check.

The S&W 686 has a wide variety of grips available – my favourite is a profiled wooden grip with dominant finger-grooves (bottom left in the picture opposite). This allows for a firm but relaxed grip to hold the gun steady and it absorbs the recoil easily without me having to grip the gun too hard. These grips were in the order of $120 but for me, they are well worth the cost for the comfort and shooting accuracy they provide.

Above it is a rosewood grip brought off eBay (from Thailand – much cheaper) which I find very comfortable on my shorter barreled 686 that I use for practice on the 100 meter Field Pistol targets.

Similar shaped and plain Pachmayr grips are popular but to me, they feel a bit 'hollow' and not so solidly connected to the gun.

Some revolvers are 'grip sensitive' and will shoot differently depending on how you are holding the grip at trigger release – watch some of the top revolver shooters next to you go to a match and see the care they take in re-gripping the revolver between each shot to ensure consistency. A good, repeatable and comfortable grip on the gun is key to shooting silhouettes well.

Tip: Talk to other shooters, see what grips they are using and try them if possible. Shop around to buy and fit a better grip if you are not really comfortable with the one already fitted.

Sights:

The stock sights that come with a S&W686 are good but not ideal for silhouette shooting. I believe the four position front sight was designed especially for silhouette and it can be adjusted and locked for the correct elevation for each bank of targets at 50, 100, 150 and 200 meters, however, I always found that minor adjustments of the rear sight were still required depending on the range, wind and lighting conditions of the day. I always found the S&W standard rear sight sub-optimal for a good sight picture and on all my S&W revolvers, I swapped them out with a Millett rear silhouette sight made especially for the 686. Unfortunately, I believe the Millett sights are no longer available.

Note the comparison of rear sights in the picture below – the silhouette sights give a far better sight picture for engaging each target, the click adjustments on the rear sight are much finer and the hooded front sight keeps sunlight and shadows at bay while you are shooting.

The best option for good repeatable accuracy is to replace both the front and rear sights with a good set of after-market silhouette sights that comply with the standard regulations for 'production guns' that are applied at competition gun check.

Tip: Talk to other shooters, shop around and get the best 'competition legal' sights you can for your revolver.

Load Selection:

The obvious and best approach to determining what load to use in your silhouette revolver (or any other gun for that matter) is to talk to other shooters to find out what loads they are using – but be careful to make sure the load is suitable for your revolver. Freedom Arms revolvers are a lot heavier built than the S&W 686 and can easily handle heavier loads that could be dangerous or long-term damaging to a S&W 686. The Ruger range of revolvers lie somewhere in between.

There will also be a question of projectile weight. Probably the optimum .357 caliber projectile weight for metallic silhouette is 200 grains to ensure appropriate 'knock-down' energy at the 200 meter rams and to ensure that energy at 200 meters, you will need a muzzle velocity of around 1250 fps / 380 mps.

Many Freedom Arms .357 Mag shooters use 180 grain jacketed projectiles and push them at higher velocities to retain the knock-down power and accuracy but again, they are generally using a powder charge that's too heavy for use in a S&W 686. For other calibers such as .41 Mag and .44 Mag, you will have to ask the people

shooting them what loads they use bearing in mind that Freedom Arms are strongly built and can consistently handle heavier loads than the S&W 629 or Ruger Super Blackhawk or Redhawk.

.357 Caliber Cast Projectiles

Gas Checks	200 Grain Gas Checked	200 Grain Flat Base	200 Grain Bevel Base

I believe the best all-round projectile for the .357 is the 200 grain lead gas check if you are prepared to include the gas-check fitting step in your reloading process. If not, use a 200 grain lead flat base projectile instead but be prepared for the possibility of a bit of lead build up in the barrel which may need to be cleaned after every match. The 200 grain gas-check has a better 'front groove' for crimping the projectile into the loaded case.

Most shooters use small rifle primers when re-loading .357 Mag ammunition because they are better suited to handling the ignition requirements and pressures of the silhouette loads than small pistol primers.

The choice of powder for reloading .357 Mag ammunition may be dependent on what you have available but probably the most commonly used are AR2205, Winchester 296 or if you can source it, Vhita Viouri N110.

These are relatively slow burning pistol powders that will give the optimum velocity for the heavier projectiles without generating too much pressure – but beware – whilst having similar burning rates, these powders generate different levels of energy so the load weights in grains are NOT interchangeable.

The use of a faster burning powder such as AP100 can create too much pressure when used with the heavier projectiles. Whilst that powder can produce accurate loads with softer recoil, muzzle velocity may be limited to below optimum for 200 meter knockdown energy.

Very fast burning powders are generally only suitable for much lighter projectiles with velocities not capable of consistent knock-down energy at 200 meters. Lighter lead projectiles travelling too slowly will not have the required knock-down energy and if travelling too fast, can shatter on impact thus losing their knock-down power.

A heavier projectile travelling a bit slower will hold together on impact and on a well placed hit, will push the target down reliably.

Ultimately, you must choose a powder / projectile combination that is readily available. Read up on the supplier's reloading data coupled with the information on loads obtained from other shooters and decide which loads you are going to use.

Most probably, your chosen load will be based on using AR2205 behind a 200 grain lead projectile – that will be a good and well proven choice.

Remember that the same load can perform differently in different guns due to minor differences in manufacturing tolerances and differences in re-loading techniques. Make up a range of test loads working up towards the maximum recommended – then go to the range and test fire them to see what load shoots comfortably and groups well / best in the revolver that you are using whilst still retaining the knock-down power to fell the rams consistently at 200 meters.

With your chosen load tested and confirmed, you will be ready to start preparing your ammunition to provide the optimum quality required for optimum performance for both competitions and practice.

Tip: Talk to other shooters to find out what loads they are using and in what make of revolver. Check the powder manufacturers' reloading tables and start loading and testing your own rounds taking care to always stay within safe limits for your chosen powder / projectile combination.

Reloading Process:

The choice of brass for reloading a revolver is yours and as far as I know, there have never been any problems with readily available brands including Winchester and Starline, Remington, etc. Treat your brass well and you will get many re-loads out of each batch.

The first step in reloading (and indeed for new brass) is simply to run it through the re-sizing die. When re-sizing used brass I use a primer hole cleaning tool to remove excess dirt from the primer cavity to ensure that when re-priming, the new primer sits neatly in the hole without protruding from the base of the case. This may also prevent any 'cushioning' or blocking effect from excess residue build-up that could cause poor ignition of the primer and powder.

Neck expanding is the next step where you "bell out" the open end of the case ready to seat the projectile. At this stage I only expand the case 'just enough' to start seating the projectile comfortably so that I don't over-work the brass and cause early cracking / splitting of the case neck. Ideally, I look to seat the projectile into the first case by hand to a depth of a couple of millimeters only, then lock the neck sizing die in that position for belling the rest of the cases in the batch.

Next is what I believe is a very important step – measure the case lengths. I am not sure that any particular case length is better than any other but what I do want is EVERY CASE THE SAME LENGTH. This is important from two perspectives. One is that we have a constant shot to shot volume for the powder to burn in giving uniformity in performance, and second – it means that when we seat and crimp the projectile into the case, we get an IDENTICAL CRIMP on each case. More about the crimp later. When the brass is new, AND after I have fired a batch of brass maybe five or six times, I pick out and measure a couple of dozen cases, pick the shortest one, fit it into my case trimmer and set and lock it to take a small polishing trim off the end of that shortest case. Then I trim all the remaining cases to that same length.

Priming the cases is fairly straight forward using a priming tool. I always use the same brand / model of primers so that again I know I will be getting repeatable ignition and I make sure each primer is seated firmly into the primer pocket on each and every case.

When setting up the powder thrower, I cycle through 20 to 30 'throws' to ensure the powder column has settled in thrower before starting the test weighing / adjustment process to set the thrower to deliver the correct load of powder into each case.

I load only one primed case at a time in a specific sequence – throw the powder, do a visual check on the powder level in the case, seat the projectile in the end of the case by hand and ensure it is as close to parallel in the case as possible, then seat the projectile into the case and crimp it using the reloading press.

When seating the projectile using the press I do it in several small steps, rotating the case in the case holder between each step to ensure that the projectile slides bit by bit into the case in parallel with the sides of the case, thereby making sure there is no damage to the profile of or coating on the projectile. I end the seating process with a very hard crimp.

I believe a hard crimp is very important for accuracy in a revolver – there are several reasons for that:

- A hard crimp will hold projectile firm so that it does not move with primer ignition. Rather, the projectile holds position allowing pressure to build up in the case to get the powder burning properly – the higher the pressure the faster the powder burns.
- The recoil of a revolver causes the unfired rounds in the cylinder to move sharply which in turn can cause the projectiles in unfired rounds to move forward in the cases if not crimped securely. Movement of the projectiles will cause variable volumes in those cases with possible variation in powder burning rate and efficiency and at worst, may even cause a projectile to move forward far enough to prevent the cylinder from turning.

– A hard crimp can create a small 'bulge' in the case, thereby increasing the diameter just next to the crimp – I have measured this to be .002 to .005 of an inch. If the case is a slightly 'loose fit' in the chamber, this 'bulge' will help align the case on the centerline of the chamber thereby ensuring a smooth transition across the cylinder gap and through the throat of the barrel – I have a hunch this may assist with good accuracy. For chambers with tighter manufacturing tolerances as may be found in Freedom Arms revolvers, the hard crimp is still necessary but the 'bulge' may need to be flattened by a subsequent pass through a taper crimp to ensure the loaded rounds slide into the 'tighter tolerance' chambers easily (that was the case with my Freedom Arms).

Tip: Take the time and care to ensure your re-loading technique / process gives you the best quality ammunition and it will reward you on the line at competition time.

Summary:

The key point in all this is that there really is no 'magic formula' for getting top performance from your silhouette revolver – it all comes down to quality control in your reloading process between shoots, and quality control in your shooting process on the day. Shooting technique and mental discipline at the range remain of paramount importance.

And of course, all this 'quality control' during the re-loading process can be time consuming and tedious – especially the gas-check fitting stage. Is it really worth the effort?

Well I think it is, especially when you consider the cost of competing in a major, inter-state competition. Coupled with the entry fees you have fuel costs for travel plus accommodation and meals than can easily add up to hundreds of dollars – why waste that money by taking potentially sub-optimal ammunition with you?

Below is a sample of the performance of my own S&W 686 shot with ammo' I've loaded according to these quality assurance guidelines – I think that speaks for itself – the groups are much smaller than the targets – but shooting groups when you can take your time on the sighters is OK – it's very much harder to do in a match!