LONG RANGE TARGET SHOOTING – A BRIEF OVERVIEW

By John W. Gaines

Long range target shooting is one of the most challenging shooting sports. Long range can be said to begin at 300 yards and extend back to 1000 yards. At these ranges good rifles and ammunition are essential, but good marksmanship, and experience are equally important.

The “Palma” match is the most common long-range match in the U.S. It is named after the International Palma Team Match, which has been shot off and on since 1876. The match is fired either as an individual match or a team match. The course of fire allows unlimited sighters and 15 record shots at 800 yards in a time limit of 22 minutes; 2 sighters and 15 record shots at 900 yards in 22 minutes; and the same at 1000 yards. The rules require that only the .308 Winchester cartridge be used and that the sights be metallic. All shooting is done prone, slow fire and the target is marked after every shot.

The Palma match can be fired with any rifle chambered for the .308 Winchester cartridge. Usually the rifles are custom bolt action rifles with exceptionally long barrels, and stocks designed for prone shooting, however, NRA match rifles and service rifles are also allowed.

The “Any Rifle” match is also frequently encountered. It comes in two varieties, the Any Rifle/Any Sight match (sometimes called “Any/Any”) and the Any Rifle/Metallic Sight (“Any/Iron”) match. The course of fire for either one allows unlimited sighters and 20 shots for record in 30 minutes. Usually the range is 1000 yards, but sometimes it is less. As the name implies, any rifle chambered for any cartridge (less than .35 caliber) is allowed, and there are no restrictions as to total weight, weight of trigger pull, etc. The NRA rules do require that the rifle be sling supported.

A new form of long range shooting that is growing in popularity is F Class. In F Class there are no restrictions as to caliber, weight, sights, etc. Bipods, sandbags, and mechanical rests are allowed. Muzzle brakes are not allowed. Usually the choice of cartridge for F Class is on the wild side with preference for small bores, high velocity, and long, heavy, very low drag (VLD) bullets. Many shooters prefer to stay with the .308 Winchester for economy reasons.

There are very few pure F Class matches, but some clubs do offer matches with special targets like animal silhouettes, jugs of water, etc. Normally F Class shooters shoot alongside other shooters in Palma matches or Any/Any matches, but they compete for separate prizes.

It is a ballistic fact of life that the bullet must arrive at the target traveling faster than the speed of sound. The choice of rifles and ammunition is dictated by this

simple fact. A little study of the ballistic tables will show which bullets can be launched safely with sufficient muzzle velocity to achieve a terminal velocity of about 1200 fps. Since most .308 Winchester match rifles and the M1A have a barrel twist of 1:12 the best choice of bullet weight is in the 175 to 190 grain range. Velocities of 2500 to 2600 fps are entirely satisfactory and can be achieved within maximum pressure limits.

Many Palma shooters use the 155 Sierra “Palma” bullet because that is the weight required by international rules, and they want to be familiar with the wind bucking characteristics of that bullet if they are selected for the U.S. Palma Team tryouts. This bullet must be launched at about 2950 fps in order to pass through the target at 1200 fps, hence the long barrels usually found on Palma rifles.

For the F Class or Any Rifle matches the shooter can choose from a wide variety of good bullets depending on the caliber selected. Excellent heavy, VLD bullets are available in most calibers from .224 to .338. Barrel twist must be fast enough to stabilize these bullets and so some research is required before starting to load ammunition for long range.

The shooter who is contemplating shooting long range for the first time has some homework to do before entering his or her first match. The first order of business is to make sure their rear sight will extend high enough for a 1000 yard zero. The normal “come-up” from 300 to 1000 yards is about 34 minutes. If the rear sight won’t extend that high above the usual 300 yard zero then a lower front block or a higher rear block (or both) is required. Service rifle shooters may want to get a new front sight post that has been filed down.

Many scopes do not have sufficient elevation adjustment to allow them to be zeroed for 1000 yards. Some new “long-range” models with 30 mm tubes will go high enough, but standard models usually won’t. A special mount base that is milled on a slight incline is available. This type mount gives about 20 minutes of additional elevation, and is the economical solution to the problem.

When entering his first match the shooter should tell the match director that he is unsure of his long range zeros, and ask to be squadded with an experienced shooter. He should then ask his scorer to position himself directly behind the rifle so as to watch for the trace of the bullet and look for the strike. The observer then should be able to talk the shooter onto the target. It is entirely legal to seek this kind of assistance during the “unlimited sighters” phase of the match, but once the shooter “goes for record” it is illegal to assist the shooter.

Wind doping is absolutely essential when shooting at long range. In fact, this is really the greatest challenge of the sport. Range flags and mirage must be watched constantly. Every shot must be carefully fired with just the right amount of correction on the sights. Wind changes are frequent and frustrating especially

if they occur while aiming and squeezing the trigger. The smallest gust or let-up can move the bullet a foot or two at 1000 yards.

Perfect scores are rare in this sport. Someone once described shooting at 1000 yards as being like “shooting at a truck tire a half mile away and trying to hit the hubcap”. A good rifle, good ammunition, and experience can put a shooter in the winners circle, but getting all the shots “in the hub cap” just doesn’t happen!