

.30-06 Springfield

History

When the invention of smokeless powder led to France's adoption of the 8mm Lebel in 1886, a new era in arms development began. In the early 1890's the American military began testing repeating rifles to replace the .45-70 Trapdoor Springfield. At this stage repeating rifles were considered 'wasteful' and economy was paramount. Nevertheless in 1892 America adopted their first military bolt action rifle, the Norwegian designed Krag Jorgenson. This fired the US designed rimmed .30-40 cartridge (.30 caliber with 40 grains of smokeless powder) and was loaded with a 220gr round nosed bullet at a muzzle velocity of 1968fps.

The Krag was (and still is) considered an extremely smooth feeding and relatively accurate rifle. The Krag featured a unique side loading gate that allowed cartridges to be simply dumped into the magazine albeit one at a time, and was also designed for reliable single shot loading to meet US military requirements. The Krag saw it's first active role in combat during the Spanish American war of 1898 although many soldiers were still armed with the Trapdoor Springfield. The Krag was held in high regard by those who used it to aid America's victory over Spain. Nevertheless the Krag was no match for Spain's Mauser designed M1893 7x57, the Krag could not compete with the fast clip fed Mauser or its immensely flat trajectory.

During the war, the American military attempted to increase the power of the .30-40 220 grain load to 2200fps but unfortunately, due to the single locking lug design of the Krag, this resulted in several action failures which severely wounded users, causing the improved load to be recalled.

By the end of 1898, the US Army had decided that both rate of fire and power, especially a flat trajectory, were just as important as accuracy and economy. Following the conclusion of these ideas, the U.S ordnance department set about creating a more powerful cartridge and a suitable firearm.

The government owned Springfield Armory borrowed heavily from the designs of Mauser, creating the now famous 1903 Springfield, chambered for the .30-03 cartridge (the .30 caliber cartridge of 1903). The 30-03 fired a 220gr round nosed bullet at a velocity of 2300fps. Gone was the rimmed 30-40 case design, replaced by the same case head design used in the 8x57 and 7x57 Mauser cartridges, a significant move which ultimately standardized modern cartridge design.

In 1905, Germany adopted a light 154 grain bullet for the 8x57 at an extremely high velocity of 2890fps. The U.S, keen to embrace new technologies, immediately set about upgrading the .30-03 cartridge. A more aerodynamic 150 grain pointed projectile was created and along with this, the .30-03 case was shortened by .07 of an inch (1.8mm) to optimize the new bullet design. This was the birth of the .30 US cartridge of 1906 known today as the .30-06. The Springfield rifle maintained its original designation as the 1903 Springfield. The .30-06 remained the principle military cartridge of the US for 50 years

After the change to the .30 Ball 150 grain bullet, all military 1903 Springfield rifles were recalled, the barrels cut back by one thread turn and were re-chambered for the modified cartridge. Barrel length of the final rifle configuration was 24". Velocity of the 150 grain .30 Ball was 2700fps, recorded at 78ft (Le Boulenger Chronograph) True muzzle velocity would have been 2780fps.

During the first world war (1914-1918), the US was contracted to produce P14 .303 rifles for the British Army. This project was somewhat defunct in that the P14 was designed to fire a 7mm Magnum cartridge but with economic pressures and the outbreak of war, the rifle was quickly tailored to fire the .303 cartridge, yet in this configuration, showed no advantage over the fast handling Lee Enfield. To this end, production of the P14 .303 was not of great necessity. Having the tooling on hand and no commitment to the mass production of .303 rifles, the U.S Ordnance department created a modified version of the P14 designed to fire the .30-06 cartridge. This rifle was formally adopted as a supplementary service weapon in 1917, designated by the year of its design as the M1917 rifle. This rifle saw use during WW1 and was considered an extremely fine rifle in both design and execution.

During the 1920's, the US Ordnance department began research towards the development of a rifle that would prove as effective if not more so, than the machine gun witnessed in WW1. The major downfall of both the LMG and HMG, were that for the most part, these weapons were best employed from a static position. Along with weapons research, ammunition design was also under review.

In 1926 the .30 ball 150 grain load was replaced by a high BC 174 grain boat tail bullet. Muzzle velocity was 2640fps at 78ft from the muzzle (2690fps corrected). The purpose of this load was to increase the effective range of light and heavy machine guns which naturally, would also increase the effective range of the infantry rifle. Designation of the 174 grain ammunition was .30 ball M1. Germany also changed to a heavy, high BC loading at this time.

In 1932, employed by the US Ordnance department, Canadian born firearms designer John Cantius Garand presented a prototype semi-automatic rifle for military testing. The rifle was accepted however its cartridge, the .276 Pederson was not. General Douglas MacArthur ordered that the rifle should fire the .30-06 cartridge and after modifications were made to the rifle, the US military adopted the M-1 Garand .30-06 rifle in 1936.

The M2 ball load was in essence a reintroduction of the .30 ball, utilizing new IMR powders. This load was designed at the request of the National Guard Bureau as a result of the 174 grain M1 Ball exceeding state range safety limits. Soldiers had also complained of high recoil when using M1917 and M1903 rifles when using the 174 grain load. This last infantry load consisted of a 150 grain flat base bullet over a charge of 50 grains IMR 4895 for 2740fps recorded at 78ft from the muzzle (2810fps corrected). There were of course other supplementary loads used during the 50 year service span, such as the 145.5 grain tracer, the 165 grain armor piercing (AP) bullet and the M72 match load which fired a 173 grain FMJBT projectile at 2640fps (measured at 78ft).

Although both the Springfield and M1917 rifles remained in service, the Garand was the principle rifle used by US forces when America entered the Second World War after the Japanese attack on

Pearl Harbor on the 7th of December 1941. The Garand was an incredibly effective rifle but was not without its shortcomings. A main drawback was the magazine which retained its clip until all 8 rounds had been fired before ejecting, causing difficulty when topping up the magazine from half full. The rifle was considered by some, to be overly long with its 24" barrel. The rifle was relatively heavy yet it produced a level of recoil detrimental to controlled aiming during rapid fire.

For the most part, U.S soldiers became very attached to the Garand rifle design, regardless of both its practical and theoretical shortcomings. Nevertheless, by the end of the war, the US Ordnance department had become fully involved in designing a replacement rifle and cartridge after witnessing the effectiveness of the German assault rifle chambered for the low recoiling 7.92x33 Kurz. This eventually led to the US creation and adoption of the M14 rifle chambered for the 7.62x51 NATO (.308 Win) which the U.S formally adopted in 1957.

Although the .30-06 was officially retired in 1957, large amounts of surplus ammunition dictated that the .30-06 would continue to see supplementary use in training and warfare through to the 1970's. Furthermore, the .30-06 remained an excellent sniper cartridge up until the official adoption of the Remington M40 Sniper rifle chambered in 7.62, introduced in 1969.

Carlos Hathcock (1942 - 1999)

Gunnery Sergeant Carlos Hathcock served as U.S marine sniper during the Vietnam conflict (1963-1973). His service as a sniper came at a time when the U.S military had abandoned sniping as a method of warfare. One man, a Lieutenant Edward (Jim) Land, held onto and promoted the concept of sniping as an effective means of combat. Land formed a sniper training and unit formation program in Vietnam, employing, among other excellent soldiers, Carlos Hathcock.

Hathcock became a legend, achieving incredible feats using a heavy barreled Winchester Model 70 chambered in .30-06. As a force multiplier, the statistics resulting from Hathcock and his team members time in the field would prove that a handful of snipers could be as effective, or sometimes more effective, than an entire battalion of infantry, or several thousand tonnes of ordnance. Hathcock went on to become a fundamental component in the modern USMC sniper training doctrine where he remains a legend to this day. Hathcock's life story has been immortalized via the biography *Sniper in Vietnam*, written by Charles Henderson.

As for Hathcock's rifle, the rifle was simply what came to hand at the time and the cartridge was effective. Today, 40 years on, hunters and shooters continue to enjoy long range hunting and target shooting, using heavy barreled .30-06 rifles, born out of a flattering respect and complete awe of Hathcocks achievements.

Aside from its military history, it was par for the course that the 1903 Springfield chambered in .30-06 would see great success in the hands of civilian hunters. The first sporting rifle available in both .30-03 and later the .30-06, was Winchester's model 1895 lever action box magazine fed rifle. Along with the new rifle, Winchester introduced 180 and 220 grain soft point hunting ammunition. A few years later the military Springfield rifle was made available to civilian hunters, the rifle and cartridge becoming an integral part of America's heritage.

The popularity of the sporterized Springfield rifle invigorated America's custom gunsmithing industry and examples of U.S customized 1903 sporters can be found worldwide. Surprisingly, both Remington and Winchester were slow to adopt .30-06 bolt action sporting rifles. Remington finally introduced the Model 30 .30-06 caliber rifle in 1921 while Winchester introduced its Model 54 .30-06 rifle in 1923.

Although initially loaded with either a 180 or 220 grain soft point (or Silvertip), the continued popularity of the .30-06 led to a wide range of factory load options from various manufacturers. The development of such ammunition (e.g. 150 grain soft point) was however slow, not appearing until after the Second World War. This fact may give the reader some insight into how the .270 Winchester took hold so quickly within the same time period.

For over a century the .30-06 has remained a top selling chambering, not only in the U.S, but also throughout the world. That said, this cartridge has had its challenges. Although long surviving, the .30-06 has passed in and out of fashion as opinions of its ballistic performance have changed back and forth.

Presently, .30-06 users can choose from an incredibly wide range of both factory ammunition and hand loading components, making the .30-06 immensely versatile. This cartridge has maintained a great deal of popularity worldwide and as other cartridge designs come and go, the .30-06 continues to produce excellent, reliable performance.

Performance

The .30-06 is a highly effective game killing cartridge, its strengths lie in the availability of a wide range of bullet weights and styles and combined with good velocities, makes the .30-06, extremely versatile. It is however important to match bullet weights and bullet styles to the job at hand. Readers need to be aware of this point and not fall into the trap of concluding that the .30-06 is versatile or emphatic with one, do it all load.

Light 110 -130 grain frangible bullets, although ideal for light game in theory, are not any more spectacular, nor more thorough in killing performance, as heavier frangible .30 caliber bullets. Nevertheless, light, frangible bullets can be put to a variety of uses in the .30-06, including light recoiling loads. Loaded with stout 125-130 grain bullets, such as the Barnes TSX and GS Custom, the .30-06 can be used to deliver great shock, wide wounding and very deep penetration on tough game, out to extended ranges of around 400 yards.

Loaded with 150 grain bullets, the .30-06 is a fast, often spectacular killer of lighter medium game. Many bullet designs boast excellent performance out to ranges of around 650 yards while the 155 grain A-Max produces wide wounding out as far as 800 yards.

Loaded with 165-168 grain bullets, the .30-06 has both high velocity and high down range killing power. Hunters can choose stout through to highly frangible bullets which cover a wide range of body weights and hunting situations including both woods hunting and long range hunting, out to 800 yards.

Loaded with stout 180-220 grain bullets, the .30-06 is an excellent performer on heavy body weights. Heavy bullets and mild velocities ensure deep penetration. On the heaviest of game, the .30-06 cannot be expected to produce wounding of the same diameter and depth as the big bores, however the .30-06 is entirely adequate in extreme situations where care is taken with shot placement.

Loaded with 178-210 grain high BC, frangible bullets, the basic 24" barreled .30-06 produces wide wounding on both light through to large medium game out to ranges of around 900 yards (1400fps), becoming subsonic at around 1170 yards. Although this cartridge is not as flat shooting as the large capacity sevens, it must always be remembered that the .30-06 can carry a heavy pay load to large bodied game at long ranges.

Recoil of the .30-06 is tolerable for adults of both sexes and teenagers providing consideration is given to stock design and scope eye relief. If either of these two factors are not matched to the shooter the .30-06 does have a level of recoil great enough to induce flinch and a general disliking of high power centerfire. This requires careful consideration. Alternatively, the .30-06 can be down loaded with ease.

For the hunter who requires a deep penetrating snap shooting woods cartridge, a cartridge for long range/ large medium game - and an adequate heavy game cartridge, the .30-06 does it all. This cartridge is not fussy with either hand loads or factory ammunition.

Factory Ammunition

Current light weight loads from Winchester include the 125gr pointed soft point at 3140fps, the 150gr PowerPoint at 2920fps, the 150gr Silvertip at 2910 and the 150gr Ballistic Silvertip at 2900fps. Velocities are all true to advertised specifications in 24" barrels. All of these bullets are fast explosive expanders for lighter medium game, with the Ballistic Silvertip being the stoutest. Winchester's premium lightweight load features the 150gr Elite XP3 at 2925fps. The XP3 features a solid copper front section with expanding petals while the rear core is filled with lead. The XP3 has its rear core chemically bonded to the jacket and during expansion, the projectile bulges almost to a solid ball. The former Winchester Failsafe had small petals, giving small wounds on lighter animals as well as occasional petal loss on bone, the 150 grain XP3, even with petal loss, maintains a large diameter through its swollen rear core enhancing energy transfer on lighter or lean game while giving deep penetration on game as heavy as 180kg.

Winchester's two middle weights include the 165gr pointed soft point at 2800fps and the 168gr Ballistic Silvertip at 2790fps. The 165 grain soft point is an explosive bullet, working extremely well on light to mid weight game. This bullet has a rather low BC and loses the ability to create hydrostatic shock at around 70 yards but continues to create broad, fast killing wounds, out to ranges of around 300 yards. The 168 grain BST is often a slow killer on game weighing under 90kg, especially at lower impact velocities. The 168 grain BST is best suited to animals weighing between 90 and 200kg (200 to 440lb) out to maximum ranges of around 400 yards.

Heavyweights from Winchester include the 180gr PowerPoint and Silvertip bullets at 2700fps, the 180gr Ballistic Silvertip and Nosler Accubond at 2750fps as well as the 180gr XP3 and E-Tip bullets at 2700fps.

The 180 grain PP and ST bullets were designed to be all around performers, a difficult task for the bullet makers. The result of this design premise, is that both of these bullets produce fast, explosive expansion on light or lean bodied game, coupled with adequate penetration on large bodied deer, though not in the same league as modern premium bullet designs. The heavy BST bullet is typically suited to game weighing between 90 and 200kg (200 to 440lb), producing wide wounding out to ranges of around 400 yards. The 180 grain Accubond does its best work on game weighing between 90 and 320kg (200-700lb), a very versatile bullet for medium to larger bodied deer, producing wide wounding down to 2200fps (300 yards). The stoutest bullets, the XP3 and E-Tip are best utilized on the toughest of game. Of the two designs, where lead can be used legally, the XP3 is the more traumatic, producing faster killing than its counterpart. Both bullets are capable of producing full cross body penetration on bovine sized game however, as is often reiterated throughout these texts, the .30 caliber does not lend itself to wide, optimal wounding of heavy game.

Remington's light weight loads feature the Managed Recoil 125gr Soft point at 2660fps and the same bullet as a high velocity load at 3140fps. 150 grain loads from softest to stoutest include the Bronze Point, the Accutip, the traditional Core-Lokt, the Swift Scirocco and the Core-Lokt Ultra Bonded bullets, all at a true 2910fps.

Both the 150 grain Bronze Point and Accutip (SST) projectiles are spectacular killers of lighter medium game. Wounding out to 300 yards is extremely violent. Of the two, the Accutip has a higher BC of .415 as opposed to .365 for the Bronze Point and also has a stouter jacket construction. The Bronze Point has a tendency to break up on impact while the Accutip loses weight along with jacket core separation at the later stages of penetration. Both are adequate killers at velocities as low as 1600fps (around 530 yards), working well on body weights up to 80kg (180lb) and 90kg (200lb) as a safe limit.

The 150 grain Remington Core-Lokt bullet is a good performer on medium game weighing up to 125kg, however, as stated in the .308 Win text, is handicapped by a BC of .314 and is best utilized for moderate range hunting, out to 300 yards as a maximum. The 150 grain Core-Lokt Ultra is also limited by a low BC of .331. The Ultra produces deep penetration on lighter bodied game and with this in mind, is an effective woods loading, utilizing high velocity to promote broad wounding for fast killing. The 150 grain Scirocco is often a spectacular killer as loaded by Remington at 2910fps. Due to the core bonded design, the Scirocco cannot be expected to produce fast killing with ordinary chest shots on lean bodied deer species as velocity approaches 2400fps and lower. When used on light or lean game at moderate to extended ranges, shots need to be placed well forwards into the major bones and muscles of game. Once the strengths of the Scirocco are utilized, it proves to be an emphatic killer, working exceptionally well on lean through to tough game weighing between 60 and 120kg (130-264lb), yet quite adequate for game up to 150kg (330lb), out to ranges of around 325 yards.

Mid weights from Remington include the 165 grain Core-Lokt, the 165 grain Accutip and the 168 grain Core-Lokt Ultra, all at 2800fps. The traditional Core-Lokt is a very good close to moderate

range medium game hunting bullet. As with many bullets of this weight, kills can be slightly delayed on light framed game, therefore it is best to try and match this projectile to larger bodied deer. The Core-Lokt has a low BC therefore, performance tends to wane beyond 125 yards. This is also true of the 168 grain Ultra, the latter being highly effective on game weighing above 90kg and up to 150kg (200-330lb).

The 165 grain Accutip is an excellent performer, ideally suited to game weighing between 60 and 120kg (130-264lb), out to ranges of around 500 yards. On light or lean bodied game, shot placement is important at impact velocities of 2400fps (180 yards and beyond) for the fastest possible killing, however this projectile does produce wide wounding on light bodied game at impact velocities of 2000fps (400 yards).

Remington produce several variations of the 180 grain bullet weight at muzzle velocities of 2700 to 2725fps including the 180 grain Core-Lokt, the Bronze Point, the Core-Lokt Ultra, the Scirocco, the Accutip and the A-Frame. The budget branded 180 grain Core-Lokt performs extremely well on large bodied deer of up to 320kg (700lb) at close ranges. The Core-Lokt Ultra performs much the same but with greater reliability. The 180 grain Ultra can be a very slow killer when used on light bodied game, best suited to game weighing above 90kg and especially useful on game weighing around 320kg (200-700lb).

The 180 grain Accutip and Bronze Point are both very hard hitting, working well on larger bodied deer however, penetration is not as deep as premium bullet designs. Nevertheless, these loads are very good at longer ranges and produce wide wounding on large animals out to 500 yards or so.

The 180gr Scirocco driven at 2700fps is capable of cleanly taking game up to 300kg (660lb) with broadside or lightly quartering shots. This bullet is designed for both open country and close range hunting, but cannot be expected to perform extreme tasks such as full penetration with tail on shots on large game, or wide wounding at long ranges. The Scirocco is an extremely good bullet design, producing immense trauma when appropriately matched to large bodied medium game and used out to medium ranges of around 300 yards or so. If used on light framed game, the 180 Scirocco needs to be directed through major muscle and bone in order to produce fast killing and is a dramatic performer, rendering very broad wounds when used accordingly.

The 180gr Swift A-Frame is an excellent woods hunting load, performing well on all body weights up to 400kg (880lb). From the muzzle velocity of 2700fps, the A-Frame (BC .400) produces an optimum balance of wide wounding versus deep penetration down to impact velocities of 2300fps or 175 yards. Wounding at mid velocities is as broad as one could hope for, resulting in very fast kills. As velocities approach 2200fps and lower, the A-Frame does lose the ability to produce wide wounding with poorly placed shots that strike too far back into rear lungs, especially on lean game.

Remington's heaviest load features the 220 grain round nose Core-Lokt at 2400fps. Although Remington's 180 grain A-Frame load now supersedes this traditional bullet, the Core-Lokt is a good, economical performer. As can be expected with a BC of .294, this load is best suited to close ranges in order to ensure broad wounding for fast killing, producing best performance inside 100 yards. The 220 grain Core-Lokt has no doubt been used to take extremely large game weights however, it is pushed to extremes when used on game weighing 400kg (880lb).

Current light to mid weight loads from Federal include the 125gr Soft point at 3140fps, the 150gr Soft point, the 150gr Sierra GameKing, the 150gr Nosler Ballistic tip and the 150gr Nosler Accubond, all at a true to advertised 2910fps. While the 125 grain bullet is excellent for use on game weighing under 60kg (130lb), its low BC of .267 is counterproductive to open country hunting. On light bodied game, the 150 grain GameKing and Ballistic Tip are far more spectacular killers at all ranges, though the latter are more expensive option.

Federal's 150 grain GameKing and Nosler BT loads both produce identical performance on game, so much so that it is impossible to tell the difference in wounding. Both are frangible bullets and are very reliable when matched to light framed animals weighing less than 80kg (180lb) out to extended ranges beyond 400 yards, limited more by wind drift than wounding potential. The 150 grain Accubond is a very good hunting bullet specifically due to its ability to produce uniform results across a wide range of body weights. Essentially a lighter game bullet due to its weight, the 150 grain Accubond is quite capable of tackling game weighing up to 150kg (330lb). Although many core bonded bullet designs tend to retain a little too much energy at impact velocities below 2600fps, the low SD of the 150 grain Accubond combined with this projectile's tendency to shed some weight, ensure excellent killing down to velocities of 2200fps or around 350 yards as loaded by Federal.

Mid weight loads from Federal include the 165 grain GameKing, the 165 grain Partition, the 165 grain Tipped TBBC and the 165 grain Barnes TSX, all at 2800fps. Federal also produce a match load featuring the 168 grain Sierra MatchKing at 2700fps

The 165gr Sierra GameKing produces excellent performance on game weighing between 80 and 120kg (180-264lb) out to ranges of around 320 yards. On lighter or very lean game, kills can be very delayed due to slow bullet expansion. At the other extreme, when used on very large bodied game, the GK becomes a highly frangible bullet and cannot therefore be relied on to produce exceptionally deep penetration at close to moderate ranges. The 165 grain Partition is more forgiving across a wider range of body weights. That said, this bullet is again best suited to game weighing between 80 and 120kg (180-264lb). The 165 grain Partition works very well down to impact velocities of 1800fps (500 yards) when used on suitable body weights and is reasonably fast killing on light bodied game but cannot always be expected to produce immensely fast kills on light animals.

The 165gr TSX is best suited to game weighing around 320kg (700lb) although it is adequate for heavier animals with careful shot placement. Delayed killing can be expected at impact velocities below 2600fps (beyond 100 yards) however deep, broad wounding is assured. The TSX does its best work when driven into major bones. The 165 grain Tipped Trophy Bonded Bear Claw (TBBC) has a similar tough nature to the Barnes TSX but tends to dump more energy at lower impact velocities, resulting in faster killing, especially at impact velocities of between 2200fps and 2600fps.

Federal's heavy weights include the 180gr Soft point, the 180 grain Partition, the 180 grain Accubond, the 180 grain TSX and the 180 grain Tipped TBBC, all at 2700fps. Federal's heaviest load features a proprietary 220 grain Speer Hotcor bullet at 2400fps.

The 180 grain Federal soft point is best suited to game weighing between 90 and 320kg (200-700lb) with ordinary chest shots. The 180gr Nosler Partition is a good bullet for larger bodied game along with the usual Partition versatility. The 180 grain Partition produces clean, though slightly delayed killing on light animals (60kg), is ideal for Red deer to Elk sized game (320kg) out to 500 yards and is adequate for (but not ideal) for use on very heavy bodied game. As suggested in the .308 text, when used on game weighing around 600kg (1300lb) and above, the Partition is occasionally prone to tumble through round ball joints, losing its rear core, resulting in limited vital wounding. The Partition can however be relied on with neck, head and rear lung shots (avoiding the ball joints) when used on heavy game.

The 180 grain Accubond produces best performance on game weighing between 90 and 320kg (200-700lb), out to ranges of around 300 yards (2200fps). This bullet has a higher BC than the traditional Partition but sometimes, due to its core bonded design, lacks the ability to utilize its BC at and beyond 300 yards where kills can sometimes be delayed. The Accubond does however tend to impart more energy than competing core bonded designs at impact velocities of 2200fps and providing enough resistance is met, can be found to show merit at 2000fps (400 yards). On very large animals weighing between 400 and 600kg, the Accubond loses a lot of weight during early penetration and has a tendency to produce somewhat lack luster wounding in comparison to tougher bullets such as the Tipped TBBC. Negatives aside, the Accubond can be an extremely good performer when matched to appropriate game weights and ranges.

Federal's 180 grain TBBC tends to produce delayed killing on light bodied game and as can be expected, produces better results on game weighing above 90kg (200lb) and is ideal for game weighing around 320kg (700lb). The TBBC is more reliable than Federal's 180 grain Partition load when used on game weighing between 400 and 600kg (880-1300lb). The 180 grain TSX is likewise, very reliable on heavy bodied game. Again, it must be reiterated that the TSX can produce delayed killing regardless of exceptional penetration and adequate wounding. For Grizzly bear, a tough core bonded bullet design such as the Tipped TBBC (also A-Frame and Woodleigh) can produce faster anchoring of animals in lieu of ideal shot placement due to greater energy transfer upon impact.

Federal's 220 grain Hotcor is the result of yet another excellent Federal Speer collaboration. The Hotcor tends to be a very violent performer when used on mid weight game at close to moderate ranges. The Hotcor is a round nose design and having a BC of only .293 is best suited to woods/bush hunting. This is an economy load so premium performance cannot be expected, yet this is a very good bullet for use on Elk sized game. Penetration and wounding are very similar to results produced by the 180 grain Partition.

Loadings from Hornady are divided into two lines, the standard Custom line and the Superformance line which achieves true to advertised high performance in 24" barrels.

Standard light weight .30-06 loads from Hornady include the 150gr Interlock (flat base) and the 150 grain SST, both at 2910fps. Superformance loads include the 150 grain SST, the 150 grain InterBond and 150 grain GMX, all producing 3080fps.

The flat base interlock is a very basic, conventional soft point bullet, suitable for hunting light

bodied game out to 300 yards and 400 yards at a push. The 150 grain SST is vastly superior, boasting a higher BC, a stouter jacket, yet is exponentially more violent in performance. The 150 grain SST is a very good performer on lighter medium game and providing the shooter can read winds, the standard load can be a very effective killer out to 675 yards (1600fps) while the SF load can be pushed to take game out as far as 750 yards, quite an achievement for a somewhat dumpy bullet weight with a BC of .415. The .30-06 / 150 grain SST combination is quite spectacular when used on game weighing under 80kg (180lb), especially at normal hunting ranges of up to 300 yards.

The 150 grain InterBond SF load at 3080fps is very useful, especially when used in conjunction with the SST as a longer range counterpart. The InterBond is designed to be tough, giving deep, broad wounding on medium game at ordinary hunting ranges (out to 300 yards). The 150 grain .308 InterBond is prone to over expand at close ranges, but this should not be seen as a disadvantage providing the bullet weight is matched to appropriate game weights. The 150 grain InterBond is ideal for game weighing around 80kg (180lb) and up to 150kg (330lb). The InterBond does its best work at impact velocities above 2400fps (300 yards), producing hydrostatic shock at impact velocities of 2600fps and above (210 yards). The 150 grain InterBond should be taken into consideration for woods hunting where a heavier bullet might otherwise not meet enough body weight resistance, leading to slow kills / lost game animals.

The 150 grain GMX is a tough bullet, adequately suitable for large bodied deer weighing between 80 and 200kg (180-440lb). The GMX can produce delayed killing at impact velocities below 2600fps and especially below 2400fps, more so when used on lean or light game. The design premise of this bullet is to meet regulations in U.S States which impose lead restrictions on hunters.

Middle weight standard loads from Hornady include the 165 grain Interlock BTSP and SST bullets at 2800fps. Superformance loads include the 165 grain SST and InterBond at 2960fps, along with the new 165 grain GMX at 2940fps (untested).

The 165 grain Interlock BTSP is ideally suited to game weighing around 80kg (180lb) but shows flexible performance on both lighter and heavier game, reaching its limits on game weighing around (150kg/330lb). The 165 grain BTSP is generally a good economy load when matched to appropriate game weights. The same can be said of the 165 grain SST however, wounding tends to be much more dramatic. The latter is a good intermediate long range bullet for use on game weighing between 80 and 150kg producing vivid expansion down to 1600fps. The SST does produce wide wounding on very light framed game, increasing versatility. The stout 165 grain InterBond can be used in conjunction with (same trajectory) the SST load as a longer range bullet. Best suited to game weighing above 90kg (180lb), the 165 grain InterBond is ideal for game weighing around 150kg (330lb) but is adequately suited to Elk sized game.

Standard heavy weights from Hornady include the 180 grain double cannelure Interlock soft point (flat base) at 2700fps and the 180 grain SST, also at 2700fps. Superformance loads include the 180 grain SST and InterBond at 2820fps.

The 180 grain Interlock is a generally good performer on game weighing between 80 and 180kg (180-400lb), out to around 300 yards. The Interlock shows some flexibility on lean game, producing adequate wounding but is not as effective as the SST. The 180 grain SST produces violent

wounding on light through to large bodied medium game. The 180 grain SST is best suited to deer weighing between 90 and 200kg (200-440lb) but is adequate for use on large bodied deer of up to 320kg (700lb), coming into its own at ranges of between 150 and 700 yards. At close ranges the 180 grain InterBond is much more reliable than its SST counterpart if exit wounding is to be expected when used on tough game weighing above 90kg (200lb). The InterBond is very well suited to Elk sized game. By the same token, the InterBond can be a very slow killer when used on lean game or at ranges beyond 200 yards.

Hand Loading

The .30-06 is versatile regarding powder selection while performance can also be enhanced via the use of specific powders. IMR 4064 and Varget (ADI 2208) are optimal burn rates for 130 to 150 grain bullets while IMR4350 and H4350 (ADI 2209) work well with ideal with 165 to 180 grain bullets. Slow burning powders such as Reloader 22 (MRP) and Superformance can produce outstanding performance with 195 to 220 grain projectiles. From a 24" barrel, the .30-06 is typically capable of comfortably pushing 130gr bullets at 3200fps, 150 grain bullets at 3000fps, 165-168 grain bullets at 2850fps, 175 grain bullets at 2800fps, 180 grain bullet at 2750fps, 200 grain bullets at 2550-2600fps, 208-210 grain bullets at 2450fps and 220 grain bullets at around 2400fps. Some rifles may produce velocities 50 to 100fps faster than these statistical averages, especially if using the afore mentioned slow burning powders with heavy projectiles.

Hunting projectiles from Sierra include, the 110 grain HP Varmint, the 125 grain soft point, the 135 grain single shot pistol, the 150 grain GameKing, 150 grain Prohunter, 150 grain round nose, 165 grain GameKing, the 165 grain GameKing HPBT, the 180 grain GameKing, the 180 grain Prohunter, the 180 grain round nose, the 200 grain GameKing and 220 grain round nose.

Sierra also produce several match bullets though these are unsuitable for hunting most game apart from wild Boar. Ideal weights for the .30-06 versus Boar include the 168gr SMK (BC .462), the 175 grain SMK (BC .505).

The 125 and 135 grain Sierra bullets can be used to create light recoiling loads for beginners and are easy to download. The 135 grain SSP is a soft, highly frangible bullet, suitable for downloading to 2600fps. The 125 grain Pro-Hunter is much stouter and best utilized at higher velocities. Both designs shed velocity quickly and are therefore best used at close to moderate ranges, regardless of muzzle velocities.

The 150 grain GameKing is best suited to light bodied game weighing up to 70kg and 80kg (180lb) as a safe maximum. This bullet is stout, yet highly frangible, producing best results inside 450 yards (2000fps). The 150 grain Prohunter is designed to produce deeper penetration than its GK counterpart, ideal for the same body weights but more reliable in woods/bush hunting situations.

The 165 grain GameKing soft point and GameKing hollow point are tough bullets, producing delayed killing on light or lean bodied game. The 165 grain GameKing bullets come into their own when used on game weighing between 80 and 100kg and up to 150 kg as a safe limit. Differences in

wounding between the hollow point and soft point are hard to determine much of the time. Occasionally the hollow point will render an immensely wide wound however, the two designs tend to be very similar regarding both wounding and penetration for the most part. As mentioned in the .308 text, those who have hunted game averaging 100kg (220lb) may be familiar with the challenge of finding a bullet that is neither too soft or too stout nor too light or too heavy. The Sierra 165 grain bullets strike the balance in an economical fashion.

The 180 grain GameKing is very stout but performs well on game weighing between 90 and 180kg (200-400lb) out to ranges of around 325 yards. The 180 grain GK is also adequate for Elk at ranges of between 200 and 400 yards which allows the GK to expand but not fragment and at these velocity parameters, jacket core separation is minimized. The stout 180 grain Prohunter is also suitable for game weighing between 90 and 180kg, producing acceptable performance on Elk (320kg / 700lb) at close to moderate ranges. The 180 grain round nose is a fast killer at close ranges, across a wide range of body weights up to 200kg (440lb). The RN is adequate but perhaps not ideal for heavier body weights.

The 220 grain Sierra round nose performs very well from muzzle velocities of 2400fps when used at close ranges on mid weight game. This bullet weight and conventional design was once considered optimal for use on Moose and Grizzly Bear but today, premium bullet designs have superseded this type of conventional bullet design. The 220 grain Sierra RN can produce both deep penetration and wide wounding on large animals but like so many projectiles, if it encounters heavy ball joints, there is a potential for arrested penetration. Nevertheless, the 220 grain RN uses sectional density and moderate velocities to aid penetration and for hunters on a limited budget, is an acceptable large bodied game hunting bullet, producing acceptable wounding on body weights of between 320kg and 600kg (700/1300lb) out to a range of around 200 yards. All factors aside, sometimes it is simply a joy to bush/woods hunt medium game with a long for caliber, conventional round nose bullet. In this regard, the 220 grain Sierra gives adequately fast expansion, good wounding and outstanding penetration on light to mid weight deer species.

Speer hunting bullets include the 110 grain SP, the 110 grain HP, the 125 grain TNT HP, the 125 grain SP, 130 grain HP, the 150 grain BTSP, the 150 grain Hotcor SP, the 150 grain round nose Hotcor, 150 grain protected point Mag Tip, the 165 grain Hotcor, the 165 grain BTSP, the 180 grain Hotcor, the 180 grain BTSP, 180 grain Mag Tip, the 180 grain round nose Hotcor and the 200 grain Hotcor. Speer's latest development is the Deep Curl range of premium core bonded bullets in the weights 150, 165, 180 and 200 grains (untested at this time of writing).

Speer's light weight bullets are suitable for both youth loads and varminting. Surprisingly, many hunters do enjoy varminting with the .30-06 as a means of maintaining good practice with their favorite rifle.

The 150 grain Speer BTSP can sometimes be a little too frangible when used on medium game at close ranges. Wounding is violent, penetration is usually adequate but not deep. The 150 grain BTSP shows its strengths, used on lighter bodied game at moderate to longer ranges or between 2700fps through to 1800fps (125 yards to 600 yards). The 150 grain Hotcor is a violent performer at close ranges, a generally good economy style bullet for the hunting of lighter bodied game out to 300 yards.

The 165 grain Speer BTSP is very soft, producing fast clean kills and wide exit wounding on light bodied game down to 1800fps or 710 yards in the .30-06. This bullet is a good performer on game weighing up to and around 150kg (330lb) and can be used on heavier bodied deer with care. BC is a very high .520. The 165 grain Hotcor is a tough bullet yet it dumps energy in an emphatic manner. This bullet is best used on game weighing between 90 and 150kg (180/330lb) out to moderate ranges of around 300 to 350 yards.

The 180 grain Speer BTSP is a good performer on light framed game. This bullet is well suited to game weighing between 70kg and 180kg out to ranges of around 625 yards. The 180 grain BTSP is an acceptable performer on Elk sized game at impact velocities below 2000fps. BC is .545.

The 180 grain Hotcor is very stout, ideally suited to game weighing between 90kg and 320kg out to ranges of around 300 yards. Incidents of bullet blow up are very rare with this bullet design (and also the Sierra Prohunter) providing the projectile is not asked to tackle immense body weights combined with Bovine sized bone structures.

The 200 grain Hotcor is a great bullet. Again, bullet blow up or jacket core separation is very uncommon. This is a good economical bullet for hunting large bodied game in bush/woods environments, excelling on body weights of between 90 and 400kg (200-880lb) and adequate for larger game under ideal conditions.

Light weight bullets from Hornady include the 110 grain soft point and 110 grain V-Max, 130 grain single shot pistol, the 150 grain round nose Interlock (.30-30), the 150 grain flat base soft point Interlock, the 150 grain BTSP Interlock, the 150 grain SST and the 150 grain InterBond.

Hornady's 130 grain single shot pistol bullet is a little too soft for use in the .30-06 at full velocities. The standard 130 grain soft point is also very soft and although it can be driven at up to 3200fps, it is not as spectacular as one might expect when used on light framed game. Instead, the 130 grain SP is better utilized as a training / light recoiling moderate range hunting load for younger or new shooters. Downloaded to 2600fps, the 130 grain bullet is an adequately clean killer out to 200 yards.

Hornady's inexpensive 150 grain BTSP and FBSP Interlock bullets both produce fast, emphatic killing on lighter medium game at normal hunting ranges. Jacket/core integrity is somewhat poor at impact velocities of 2400fps and above however penetration is more than adequate for game weighing up to 70kg (155lb). Both projectiles give optimum wounding and fast killing at full .30-06 velocities, having a useful range of around 400 yards.

The 150 grain SST as mentioned in the factory ammunition section is really quite an outstanding bullet for use on light to mid weight deer species of up to 80kg (180lb). The faster this bullet is driven the better, producing broad wounding and very fast killing out to 300 yards combined with adequate long range performance. The 150 grain InterBond produces best results at impact velocities above 2400fps however much depends on game weights, being more emphatic on heavily built medium animals weighing up to 150kg (330lb) game down to 2200fps. The InterBond is prone to over expand and lose SD on tough game, however in this regard, energy transfer is assured on mid weight game such as the heavy species of Whitetail, Red deer, Thar and Boar.

Medium weight bullets from Hornady include the 165 grain BTSP Interlock, the 165 grain flat base soft point Interlock, the 165 grain SST and the 165 grain InterBond.

Hornady's 165 bullets tend to produce excellent accuracy and velocities in .30-06 rifles, whether of vintage designs and twist rates, or modern barrel designs. This bullet weight is ideal for game weighing between 80 and 150kg (180-330lb). That said, the traditional Interlock and SST bullets are fast expanders, producing wide wounding on light bodied game and adequate penetration on slightly heavier game. Of the two designs, the SST is, as can be expected, the more dramatic killer. On lean game at longer ranges, the 165 grain SST never really produces immensely delayed killing. There can at times be a delay in killing at long ranges but the results are nonetheless emphatic. Penetration on game weighing between 150 and 180kg (330-400lb) is acceptable at close ranges where velocity is still around 2900fps however exit wounding cannot be expected on tough game. While the 165 grain Hornady bullets and especially the SST are ideally suited to mid weight game species of the suggested weight range, some hunters would rightly view this bullet weight and the SST design as a good all-round performer. The 165 grain InterBond is a tough bullet, doing its best work on game weighing between 80kg and 200kg (180-440lb) and adequate for deer/antelope weighing up to 320kg (700lb). From muzzle velocities of 2950fps, wounding performance begins to wane after 275 yards (2400fps), showing a more marked decrease in wounding potential at 375 yards (2200fps) and onwards.

Heavy bullets from Hornady include the 180 grain BTSP Interlock, the 180 grain flat base soft point double cannelure Interlock, the 180 grain round nose Interlock, the 180 grain SST, the 180 grain InterBond, the 190 grain BTSP and the 220 grain round nose Interlock.

The 180 grain Hornady Interlock is an acceptable performer on large bodied deer but is in no way of in the same class as a core bonded design such as the InterBond. This bullet is best used on game weighing up to 180kg as a safe limit, showing some flexibility on lean game. The violent SST is a good performer and as suggested in the factory ammunition section, is best suited to deer weighing between 90 and 200kg (200-440lb) at close to moderate ranges while proving to be very useful on large bodied deer of up to 320kg (700lb) at long ranges of up to 700 yards. The 180 grain InterBond can be a very slow killer on lean game, best suited to game weighing above 90kg (200lb), ideally suited to Elk sized game.

The 190 grain BTSP Interlock is a very soft, fast expanding projectile, best suited to deer weighing between 90 and 200kg (200-440lb), out to ranges of around 200 yards. The 220 grain Hornady round nose is also very soft, again suited to deer weighing up to 200kg at close ranges.

Hornady A-Max bullets are made in the weights 155, 168, 178 and 208 grains. These are all highly frangible, explosive, fast killing projectiles.

The 155 grain A-Max is a bit of an oddity in that it can at times be driven much faster than expected. To this end, it should not be overlooked, especially in 1:12 twist barrels. The 155 grain A-Max is best suited to light bodied game weighing around 60kg (130lb) however at longer ranges, 80kg (180lb) is not too much to ask of this projectile. Effective killing range (good wounding) is approximately 900 yards (1400fps).

The 168 grain A-Max works very well on game weighing up to 80kg (180lb), out to a range of around 900-950 yards. The 168 grain A-Max can be used for close range woods/bush hunting providing the hunter understands the limitations of frangible bullets and does not expect exceptional penetration. In other words, this projectile and its heavier counterparts can be used for all-round work on game weighing up to 80kg. The 168 grain A-Max at an MV of 2950fps breaks 1200fps at 1125 yards and breaks the sound barrier (1120fps) at around 1230 yards based on a standard atmospheric model.

The 178 grain A-Max is a hard hitting bullet and can be employed for all-round work on game weighing up to 150kg or so, again, with an understanding towards limitations and shot placement at close ranges on larger animals. On game weighing less than 90kg, the A-Max can be used at woods ranges without fuss regarding penetration. The strengths of this bullet do of course occur at long range and the 178 grain A-Max fragments in a reliable manner, right down to 1400fps (900 yards). The sound barrier and potential associated bullet yaw occurs at around 1200 yards from an MV of 2800fps. BC is .495.

In the .30-06, the 208 grain A-Max can be driven at around 2500fps. Seem slow? - not at all. As an open country large deer/Elk bullet, the 208 grain A-Max with its high BC of .648 shows its strengths, producing excellent wounding and adequate penetration light through to large framed game between the ranges of 100 yards and 1000 yards. Below 2200fps 18-24" penetration can be expected through flesh, not bad for a frangible bullet. The 208 grain A-Max does however require a fast twist barrel of 1:10 for optimum accuracy.

Nosler Ballistic Tip bullets are available in the weights 125 grains, 150 grains, 165 grains, 168 grains (Combined Technologies) and 180 grains. Nosler Partition bullets are available in the weights 150 grains 165 grains, 180 grains, 200 grains and a 220 grain semi point. Nosler Accubond bullets are available in the weights 150 grains, 165 grains, 180 grains and 200 grains.

The violent 125 grain Nosler BT driven at 3200fps is best suited to game weighing around 40 kg (88lb), out to ranges of around 400 yards. The 150 grain BT is a frangible bullet, much stouter than the A-Max, very similar to the 150 grain GameKing. The 150 grain BT does its best work on game weighing up to 70 kg (155lb), out max ranges of around 800 yards.

The 165, 168 and 180 grain BT bullets tend to produce slow killing on light or lean bodied game, especially at longer ranges of around 300 yards and beyond. The 165 and 168 grain BT bullets produce fast killing on game weighing between 80 and 150kg (180-330lb). The 180 grain BT is best suited to deer species weighing above 90kg (200lb), up to body weights of around 200kg (440lb). All three bullets can be employed for longer range work on appropriate body weights, giving acceptable performance out to 700 yards or so.

The 150 grain Nosler Partition is best suited to game weighing under 100kg, though it is quite capable of tackling game weighing up to 150kg. An important consideration with the Partition, in order to optimize performance, is to not ask too much of low SD Partition bullets. The Partition is a spectacular killer but in order to show this performance, factors of body weight and muzzle velocities need to be taken into consideration. The 150 grain Partition is a stellar performer on the

lighter deer species out to ranges of around 600 yards, though wind drift is severe at these longer ranges.

The 165 Partition is ideally suited to game weighing between 80 and 180kg (180-400lb), but with the flexibility to produce adequately fast killing on both lighter and heavier game. The 180 grain Partition produces excellent performance on game weighing up to 320kg (700lb). Both the 165 and 180 grain Partition bullets give violent wounding at ranges inside 300 yards and in low wind conditions, produce adequately wide wounding on appropriate game weights out to 675 yards.

The 200 grain Partition and the .30-06 go together like bread and butter. From an MV of 2550fps, the 200 grain Partition gives deep, broad wounding on game weighing between 200-450kg, out to normal hunting ranges of around 300 yards, yet remaining effective for longer range shooting (down to 1600fps). On heavy game such as Bovine species, the Partition struggles to produce wide wounding due to the limitations of the caliber. In this regard, although the 200 grain Partition can achieve cross body penetration on 600kg body weights, hunters really should avoid ordinary chest shots, opting for head and neck shots. This also applies to the wonderful 220 grain Partition, driven at 2350fps.

Nosler's 150 grain Accubond is a good all-round lighter medium game bullet. Wounding is wide yet penetration is relatively deep. The Accubond produces faster kills than the Hornady InterBond at the lower velocities of 2200fps due to its ability to readily shed frontal mass and weight, therefore imparting greater energy. This is a very good bullet for hunting light to mid weight deer out to ranges of around 400 yards.

The 165 grain Accubond produces excellent wounding and penetration on game weighing between 90 and 150kg (200-330lb), out to ranges of around 325 yards, but still showing merit at 400 yards. The 180 grain Accubond gives best performance on game weighing between 90 and 320kg (200-700lb), again, breaking 2200fps at 325 yards while producing adequate wounding for fast killing out to 400 yards.

The Swift range of bullets include the 150, 165 and 180 grain Scirocco bullets along with the 165, 180 and 200 grain A-Frame bullets. The 150 grain Scirocco is yet another good, light to medium weight deer bullet, ideal for game weighing up to 80kg, gradually losing its ability to render immensely wide wounds as velocity falls below 2400fps (300 yards), with more of a decline at 2200fps (400 yards). The 165 grain Scirocco is best suited to game weighing between 90kg and 150kg (200-400lb). The 180 grain Scirocco is typically suited to hunting game weighing between 90 and 320kg (200-700lb), out to ranges of around 300 yards. This projectile can be annealed (candle flame - see 7mm Rem Mag) to increase speed of expansion and reduction of frontal area for deep penetration. When the annealed Scirocco is used for woods/bush hunting mid weight game weighing between 90-180kg, where the Scirocco strikes major muscles and bone at close ranges, the entry wound can be as wide as 3" due to blow back. Projectile integrity remains completely sound throughout penetration and as suggested, the reduced frontal area aids penetration with raking shots. Certainly a dramatic performer, giving fast, emphatic kills.

Of the Swift A-Frame .30 caliber bullets, the 180 and 200 grain A-Frame bullets are outstanding performers. These really are the go-to bullets along with the Woodleigh brand, for use on tough

animals, particularly bear. The A-frame bullets expand immediately upon impact and on occasion, will produce entry wound diameters of approximately .75" followed by deep, broad wounding. Used at impact velocities of above 2300fps, these projectiles produce fast - 'safe' killing on tough game.

Barnes bullets include the 130, 150, 165, 168, 180 and 200 grain TSX bullets along with the 150, 165 and 180 grain MRX bullets (MRX untested here).

The Barnes 130 grain TSX is a good all-round bullet for game weighing up to 150kg. It is highly recommended that readers wishing to experiment with the Barnes 30 caliber bullets for use on Deer, experiment with this projectile. Meat damage is as per usual minimal, regardless of violent internal wounding. The TSX really is a good meat retrieval bullet, proving useful in the .30-06 out to ranges of around 400 yards.

The 150 grain TSX bullet is best suited to game weighing between 90 and 150kg (200-330lb) and is adequate for use on heavier bodied deer up to 320kg (700lb). Wounding is at its most violent at impact velocities above 2400fps on lean game, displaying hydrostatic shock above 2600fps, as is the norm with .30 caliber bullets.

The 165 and 168 grain TSX bullets are best suited to large, heavily muscled game weighing above 90kg (200lb) and up to 320kg (700lb). The 180 grain Barnes is much the same, requiring heavy resistance, not to aid expansion, but to ensure adequate energy transfer. These are clean killing, deep penetrating projectiles but delayed killing can and does occur at impact velocities below 2400fps. The 180 grain TSX does its best work on game weighing between 320 and 400kg (700-880lb), producing excellent penetration on game weighing up to and above 600kg, but cannot, due to its bore diameter, be expected to render wide internal wounds on such heavy game.

The Australian company Woodleigh, produce some extremely effective core bonded projectiles for the .30-06. It is worth noting that Woodleigh were perhaps one of the first (if not *the* first) company to create and master premium core bonded bullet design. Of the many projectiles available, the 180 grain Protected Point, 200 grain PP, 220 grain RN and 240 grain PP are very useful for hunting tough game. Of these, the 200 grain bullet is the stoutest, designed to withstand magnum velocities.

Woodleigh bullets do differ from product code to product code, a deliberate means of offering hunters varying rates of expansion. This is most apparent in the RN (round nose) designs in comparison to the PP, the latter producing slightly delayed expansion for deeper wounding and penetration. In contrast, the RN projectiles readily and immediately transfer energy on lean game, trading a small level of total penetration, yet with long SD bullets such as the 220 grain RN, still adequate for full cross body penetration on Bovine sized game (bullets usually arrest against offside hide).

The key to utilizing Woodleigh bullets is to understand that performance can be tailored to suit local game and conditions. The onus is however on the hunter to select suitable projectiles for the job at hand. All Woodleigh bullets are designed to expand reliably down to velocities of 1900fps and are field tested on game, rather than gel tested. The critical factor and major benefit of the Woodleigh bullets is that on dangerous game, these bullets produce faster killing than many (most) competing

premium designs, a balance of trauma versus penetration. On lean game (deer/antelope species), the PP projectiles do produce delayed killing at lower velocities, though wounding is more than adequate.

Berger VLD hunting bullets are produced in the weights 155, 168, 175, 185, 190 and 210 grains. Recently, Berger changed the jacket thickness of the VLD line of bullets, effecting performance on light or lean bodied game.

The 168, 175 and 185 grain VLD bullets are ideally suited to game weighing between 80 and 150kg at extended ranges. The 175 grain bullet works particularly well in the .30-06, achieving a good balance of velocity, accuracy and down range performance. With the current VLD design, wounding tapers off at impact velocities of 1600fps, though again, much depends on target resistance. The 190 and 210 grain VLD bullets are quite capable of tackling large bodied deer (Elk) at extended ranges, due to delayed fragmentation.

Closing Comments

The .30-06 is an immensely versatile cartridge. There was a time when ammunition selection was somewhat poor and hunters had a choice of either a soft 150 grain bullet or in many instances, a stout 180 grain bullet. The 180 grain bullet was promoted as being the best all-round choice which was quite often detrimental to the performance and popularity of this cartridge. Australian gun writer Nick Harvey put it best many years ago when he said “ a deer hit with the 180 grain bullet may go down immediately but is just as likely to get up again and run anywhere from 100 to 300 yards”.

By matching bullet weights and bullet construction to game weights and ranges, the .30-06 can be tailored to suit pretty much any hunting situation. Utilized accordingly, the .30-06 is truly a joy to hunt with.

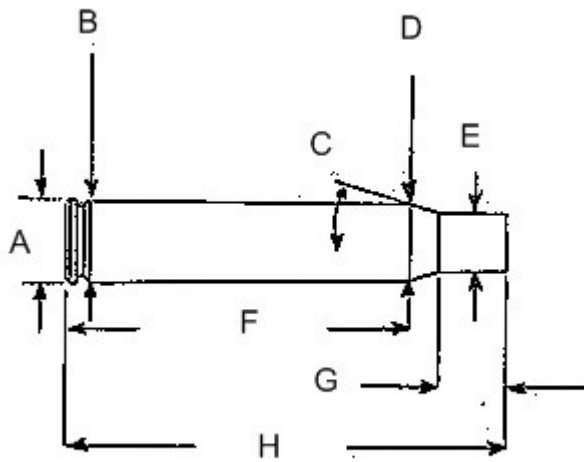
Suggested loads: .30-06 Springfield					Barrel length: 24"	
No	ID		Sectional Density	Ballistic Coefficient	Observed MV Fps	ME Ft-lb's
1	FL	Hornady 150gr SST	.226	.415	2900	2801
2	FL	Hornady 150gr SF SST	.226	.415	3080	3159
3	FL	Remington 180gr Swift A-Frame	.271	.400	2700	2913
4	FL	Federal 180gr TBBC	.271	.497	2700	2913
5	HL	150gr SST	.226	.415	3050	3098
6	HL	165gr SST (also Superformance factory)	.248	.447	2950	3188
7	HL	178gr A-Max	.268	.495	2800	3098

8	HL	180gr Partition/Prohunter Interlock FB/Hotcor	.271	.441 (HC)	2800	3133
9	HL	200gr Woodleigh PP (Magnum)	.301	.450	2600	3002
10	HL	208gr A-Max	.313	.648	2500	2886
11	HL	220gr Woodleigh RNSP (also FMJ)	.331	.367	2400	2813

Suggested sight settings and bullet paths									
1	Yards	100	150	258	297	325	350	375	400
	Bt. path	+3	+3.5	0	-3	-5.8	-8.8	-12.2	-16.1
2	Yards	100	150	279	319	350	375	400	
	Bt. path	+3	+3.7	0	-3	-6	-8.9	-12.2	
3	Yards	100	140	235	272	300	325	350	
	Bt. path	+3	+3.3	0	-3	-5.9	-9	-12.8	
4	Yards	100	140	241	279	300	325	350	375
	Bt. path	+3	+3.4	0	-3	-5	-8	-11.3	-15.2
5	Yards	100	150	276	316	350	375	400	
	Bt. path	+3	+3.7	0	-3	-6.4	-9.3	-12.7	
6	Yards	100	150	267	308	325	350	375	400
	Bt. path	+3	+3.6	0	-3	-4.8	-7.5	-10.6	14.2
7	Yards	100	140	252	291	325	350	375	400
	Bt. path	+3	+3.5	0	-3	-6.4	-9.5	-13	16.9
8	Yards	100	140	249	288	325	350	375	400
	Bt. path	+3	+3.4	0	-3	-6.9	-10.1	-13.8	-18
9	Yards	100	130	228	265	300	325	350	
	Bt. path	+3	+3.3	0	-3	-6.9	-10.2	-14.1	
10	Yards	100	130	224	262	300	325	350	375
	Bt. path	+3	+3.2	0	-3	-7.2	-10.5	-14.3	-18.6
11	Yards	100	203	237	250	275	300		
	Bt. path	+3	0	-3	-4.5	-7.7	-11.6		

No	At yards	10mphXwind	Velocity	Ft-lb's
1	300	7.3	2262	1703
2	300	6.7	2417	1945
3	300	8.4	2067	1707
4	300	6.6	2182	1881
5	300	6.8	2391	1904
6	300	6.5	2348	2019
7	300	6.3	2270	2037
8	300	7.1	2210	1951
9	300	7.8	2045	1858
10	300	5.5	2116	2067
11	200	4.7	1962	1920

.30-06 Springfield



.30-06	Imperial	Metric
A	.473	12.01
B	.470	11.94
C	17 deg	
D	.436	11.07
E	.340	8.63
F	1.948	49.48
G	.388	9.85
H	2.494	63.34
Max Case	2.494	63.34
Trim length	2.484	63.04