

Air Pistol & Plinking Guide

- air pistol shooting – an introduction
- our experts views on what's available
- calibers & pellet guide

Air Pistol Shooting

An Introduction

Graham Allen details the different types of air pistol that are available

Buying an air pistol is probably the cheapest way to get into airgun shooting and is a lot of fun in its own right- it can also be incredibly frustrating, as you're holding something at arm's length and generally using open sights! With plenty of practice however, it's possible to become extremely proficient.

My introduction to air pistol shooting was when I got the chance to shoot the 'Gat Gun' that belonged to my mate's dad. A group of us, and the farmer where we were camping, were shooting tin cans in a field in Kent and I was hooked as soon as I hit the first can. Seeing it tumble to the ground was very satisfying and knowing that I'd just sent a pellet exactly where I'd aimed it, despite the rudimentary sights, was quite a buzz for an eight year old! There were about half a dozen of us and we soon ran out of pellets, so the pistol was put away and we got on with other things.

A few years later, when I found out that a mate of mine could use his Dad's air pistol, I was round his house like a shot- literally! We spent ages shooting 'targets', which were mainly Airfix kits of tanks and the odd unlucky Action Man. Looking back, it wasn't really an ideal setting but we were safe and years later I actually bought the pistol, a Webley Typhoon.

Even though I now shoot all sorts of air rifles and firearms, I still love getting my pistols out, (including that old Webley) especially when shooting at reactive targets such as spinners, knockdowns and good old-fashioned



tin cans hanging from a pole! I've got scopes and red dot optics on some of my pistols but most of them I just use with the 'irons'. It's always a good idea to wear safety glasses when shooting an air pistol (or any airgun), as targets are generally nearer than when using an air rifle, so you need to protect yourself from any ricochets.

Air Pistol Options

Spring Power: There are several types of air pistol available but the cheapest to buy and run are spring powered. Once purchased, it's just muscle power that's needed to keep them shooting- that and a decent supply of pellets of course! Break barrel, over lever and under lever styles are available. Due to the fact that there's a spring and piston moving inside when they're fired, they have a certain amount of recoil, so are the hardest type of air pistol to shoot.

Gas Power: The humble 12-gram CO2 capsule has revolutionised pistol shooting, as it's a compact and convenient way of sending a pellet or BB downrange. The capsules are normally housed in the pistol's grip and are pretty cheap, especially when bought in bulk. Single shot examples are good fun but versions with internal rotary magazines are even better and often mimic real firearms. The CO2 expands as the gun is fired and propels the pellet down the barrel; with no moving parts, there's no recoil, which makes accurate shooting easier than a springer. However, some CO2 firearms replica pistols use some of the gas to make the dummy slide work; they're very authentic to shoot, with a degree of recoil but they do use more gas!

High Pressure Air: Pre-charged pneumatic (PCP) pistols are charged from a diver's cylinder or stirrup pump, so that has to be factored in to the equation before buying one. However, if you already own the means of charging a PCP pistol, they are getting more popular each year. Quite a few companies make a PCP pistol but they can be quite expensive compared to a PCP rifle. A recoilless firing cycle ensures excellent accuracy and ease of use though.

So, whatever type you choose, you'll have great, safe shooting fun!



Pistol packing

From a few pounds, right up to a few hundred pounds, there are air and CO2 powered pistols to suit every pocket

First off, let's clear up a point that can cause misunderstanding. Although there has been a lot of legislation over the last few years regarding 'soft air' pistols, air cartridge revolvers, 'imitation' handguns, replicas and the like, it does not include the air pistols that we are highlighting here, other than the fact that all sales of airguns by shops must be done on a 'face-to-face' basis. The law can be complicated, but it is unequivocal on this point; any air or CO2 powered pistol that is designed to fire airgun pellets or metal BB's, is technically classed as a 'firearm', but as long as it has a muzzle energy of below 6ft/lbs, it is perfectly legal for an adult to own one – this includes CO2 models that look like 'real' firearms – without a licence.

With regard to the legal limit of 6ft/lbs, it is a fact that the vast majority of air pistols don't come anywhere near this limit, apart from some pneumatics and a few notable spring powered pistols (such as the Weihrauch HW45). Nevertheless, it's your responsibility to stay within the law, so if you have any doubts, get your local airgun club or local gun shop to check the power of your pistol over a chronograph.



Power sources

There are three main power sources for air pistols; manually cocked mechanical spring/piston, manually pumped or pre-charged pneumatic, and CO2 (carbon dioxide) in disposable canisters. Although the latter powered pistols have achieved massive popularity over the last ten years, there's still a steady interest in the more traditional 'mechanical' air pistols and the modern high power pre-charged pneumatic models.

The air pistols we will be concentrating on here are, in the main, designed for informal target shooting - universally known as plinking. Some are capable of producing great accuracy - especially the pneumatic models - but we have not included specialist air pistols designed for match competition.

Springers

The most basic air pistol is the manually cocked spring/piston type, and with these models it is you that supplies the power. These are divided into two main types; break-





barrel or over-lever.

Break-barrels pistols are just like their larger rifle counterparts, the whole barrel is hinged at the joint with the body of the pistol, and when you pull it down and back a mechanical linkage draws back a spring and piston in the compression chamber. Over-levers work on the same principal except that the barrel sits on top of the pistol (sometimes within a top frame) and is cocked by lifting it up and forward. All these pistols are 'single shot' so the loading is directly into the exposed breech before the barrel is returned to its 'closed' position.

When the trigger is pulled, the spring is released, propelling the piston back up the cylinder. The piston's head channels air behind the pellet, forcing it along the barrel and out of the muzzle – it doesn't get much simpler.

Some spring powered air pistols are capable of producing power close to the legal limit, which makes them a favourite for use against reactive targets like FT knock downs... or just for peppering tin cans!

Spring pistols can be had for under £25 from companies such as Sportsmarketing, right up to £230-£250 for the high powered Weihrauch HW45. Mid-priced models of between £40 and £150 can be found in the Baikal, Cometa, Gamo, RWS/Diana, Webley and Weihrauch ranges. There is even a 'semi-recoilless' spring pistol in the shape of the Typhoon from Webley, which is a barrel cocking model, but with a unique recoil reducing slide action.

Pneumatics

The next group of pistols are the pneumatics, and these can be broken down into three sub-categories; single stroke pneumatics, multi-stroke pneumatics and pre-charged pneumatics (PCPs).

The biggest advantage of a pneumatic is that it is 'recoilless'. In airgun terms 'recoilless' simply means that there is no mechanical movement when you pull the trigger – unlike the internal movement of a spring-piston powered pistol. Also, as the actual power output is relatively low, there is very little 'jetting', which is the airgun term for the 'equal and opposite effect' as explained to you by your Physics teacher all those years ago... in short, when you fire a pneumatic pistol, it is virtually free of any kind of movement, therefore making it a lot easier to achieve accurate results.

With manually charged pneumatics, either the barrel or a separate integral lever is used to 'pump' air into the pistol. On the easy outward movement of the cocking lever a piston is drawn back inside the pistol, thereby sucking air into the compression cylinder, then the actual cocking effort is required on the return part of the stroke, as the piston compresses the air in the cylinder. When the trigger is pulled, the compressed air is released and expands, pushing the pellet down the barrel.

Most of these manually charged pistols are 'single stroke', which means that they only require one cycle of the cocking lever to achieve their full power potential. For this reason their power is usually fairly low, averaging at around 2 - 2.5ft/lbs, but they can be extremely accurate, so this type of pistol is favoured for paper target work. Examples of this type of pistol includes several models by Gamo starting from as little as £100. In fact the top end Gamo Compact pistol (£185 approx.) and the Weihrauch HW75

(£275 approx.) – both over-lever cocking models – come complete with ergonomic grips and micro adjustable open sights, and are so accurate that you could use them as an introduction to precision 10m match shooting.

Multi-stroke pneumatic pistols – sometimes known as ‘pump-ups’ – require multiple strokes of an integral underlever to achieve maximum pressure. These pistols can be both powerful and recoilless, as is the case with the Crosman 1377C American Classic (which used to be known simply as the medallist). The downside to multi-strokes is that they can be tiring to ‘pump’ to full power, although they can be used at a lower power with just one or two strokes of the pump.

The last category of pneumatic is the ‘precharged pneumatic’ or PCP, which has a built in air cylinder (or reservoir) that is filled with compressed air from a diver’s bottle or charged with an external manual pump.

Precharged pneumatic pistols offer the best of all worlds, being powerful, recoilless and effortless to charge – if using a diver’s bottle. They power pellets in the same way as other pneumatics, but do not require manual charging for each shot, as the air cylinder stores enough compressed air for dozens of shots before refilling is required. When the trigger is pulled, they release just enough compressed air to power the pellet at the required power.

Falcon Airguns offer several models in their PCP pistol range, including multi-shot magazine versions – prices start at around £280 through to £350 depending on specification. The top of the action is dovetailed so it can be fitted with open sights, red dot sight or optical scopes, making them very versatile. A newcomer to the PCP pistol scene is the FX Ranchero multi-shot pistol from Sweden, now being imported by Deben Group Industries.

Another excellent PCP pistol is the multi-shot Rohm Twinmaster with ergonomic grips, which can also be used as a single shot match class 10m target pistol. Rohm pistols are distributed in the UK by Brocock and prices vary from £380 for the Allrounder to £730 for the Match model. Rohm also makes CO2 powered pistols in the same model format as their PCPs, which brings us nicely to the last category of air pistols – the CO2 powered models.

CO2 pistols

Carbon dioxide gas (CO2) is used to power a wide range of pistols from repeating pistols for rapid fire and accuracy competition, to cheap ‘plinkers’ for informal target shooting. Like pre-charged pneumatics, all CO2 pistols are recoilless.

Virtually all CO2 powered guns are in .177 calibre, and are either chambered to fire standard airgun pellets and/or BB’s. A few pistols are available in larger calibres, like the Crosman 2210SB and the Sheridan EB22 which are available in .22 calibre.

All CO2 guns use a disposable 12g container of pressurised liquid CO2 (Carbon Dioxide), commonly called



a bulb, capsule or Powerlet (the last actually being a trade name for Crosman CO2 lubricated capsules).

The amount of shots that are obtained per capsule depends on the pistol being used, and also the set power output. Between 40 to 70 shots is a broad average for pistols.

One of the biggest attractions of CO2 pistols is that they can be made to outwardly replicate ‘real’ cartridge pistols, as is the case with the Umarex range which have models resembling semi-auto pistols from Beretta, Colt, Walther and even Smith & Wesson revolvers. Crosman, Daisy and Gamo also make generic ‘replica’ looking CO2 pistols and revolvers, but not specific reproductions of any particular brand. It’s worth noting that even the models that look like semi-autos are in fact ‘revolvers’ as they use a cylindrical magazine concealed in the top frame, while the CO2 bulb power source sits inside the handle – where the ‘clip’ magazine on a real cartridge pistol would sit. One brand of CO2 pistol, the Anics from Russia, bucks this trend, with a either a 15 shot clip magazine or – in the case of the Skif-A3000 model – a transparent polycarbonate magazine containing a continuous ‘belt’ loaded with up to 26 pellets or BBs. The Beretta Elite II also has an 18 shot clip magazine but for BBs only, and is priced at around £80.

Depending on model, CO2 pistols can cost as little as £65 for a simple Daisy Powerline 93 model right up to £175 for something like a Gamo PT-80 Tactical complete with red dot sight, laser and moderator, or Walther CP88 Tactical with MDS red dot sight and sound moderator for around £265.

Grab a handful

Air pistol shooting has always been fun, and there’s never been a time when so many different models have been on offer. Standard air or CO2 pistols don’t require a licence, and their moderate power output means that they can be used in a garage or garden – providing that a safe back stop is used and no pellet or BB is allowed to stray out of the boundaries of your property. Most air rifle clubs also offer ranges for practising your pistol shooting skills, and some even organise competitions. So why not give it a try?

Pistol Packin'

Pete Wadeson takes a look at the world of air pistols and what you can do with them

Air pistols are an odd breed; seen by many firearms users as little more than toys, which is far from the truth. Likewise the people who use them are often perceived as wannabes who just want that handgun look; again wrong. In this article I hope to give an overview of what's available and, more importantly, what you can do with them from fun plinking to serious competition.

Many manufacturers offer pistols of all types – spring, PCP and CO2-powered and my research has shown that their popularity is on the increase. Even though I have a few pistols of my own, I was amazed at the superb quality of equipment available and the organisations and clubs who run pistol ranges and organise competitions.

Going by what I've seen in the past twelve months there's some amazing things been happening down at club level, with many now having dedicated pistol ranges.

Safety and common sense

An air pistol producing 6ft lbs of energy or under doesn't require a licence, however, what it does require is common sense. Always ensure targets have absorbent backstops, they may seem low powered but at 12-15 yds a legal limit, spring-powered pistol can rip through a tin can. This puts it into perspective; as a stray pellet could hit something it shouldn't - with serious consequences for everyone involved. So use an adequate backstop in both size and energy absorption.

Many of us started out as back garden plinkers and still do, and there's no harm in that. But consider who might be looking at your apparent fun – neighbours for instance. Visually what they see is a handgun - and many air pistols looks highly realistic. So if Mrs Smith is looking over her fence and sees what is apparently someone with a handgun; who's she gonna' call?

I'm not trying to be a scare monger, rather just reminding fellow shooters it's all too easy to attract trouble. So either set up your range so you can't be easily seen – or if you get on well with your neighbours, tell them what you will be doing.



What's out there now

Air pistols use the same power and operation systems as rifles - pre-charged pneumatic and manual pneumatic, or spring-powered which are the most common. Depending on type these can be bolt-operated,. Most are single shot but some pre-charged pneumatics and most CO2 pistols offer a multi-shot facility. The latter usually use cylinder or box-type multi-shot magazines which can hold from 6 right up to 28 shots – depending on the model.

Pneumatics (PCP or manual) are powered by compressed air, CO2 pistols are powered by a disposable 12-gram CO2 bulb, and spring powered guns are powered by you with either a side-lever, over-lever or break-barrel cocking action. These manually cocked spring piston type air pistols are the most common, and some are capable of producing near the 6ft/lb legal limit, which makes them the favourite for use on reactive (knock down) targets.

Pneumatics

Pneumatic pistols are usually easier to shoot accurately as they offer no discernable recoil effects, unlike a spring gun that has both spring and piston moving forward to fire the pellet.

There are three types of pneumatic pistols; single-stroke, multi-stroke and PCP, the latter has an air reservoir mounted to it which is filled in the same way by bottle or pump. Single-strokes offer only one cycle (stroke) of the operating lever to compress the air in the reservoir. Usually these are of lower power output. If it's a multi-stroke then the rule of thumb is the more pumps you put in the more power you get out. However, like pump-up rifles, they soon become tiring so not really a model the serious shooters would opt for.

The PCP system is very much in the match/target pistol domain and they're often more expensive. However, you get high power, accuracy and a recoilless action,

plus the most strenuous thing you'll need to do is open the filling bottle valve. Brocock and FX both offer PCP air pistols in single or multiple models.

Gas Blasters

CO2-powered pistols usually have a semi-automatic or revolver look, yet both types use a double-action mechanism with a rotary magazine holding a number of pellets. Fast to shoot and easy to reload they gave airgunners something new and ex-handgunners something back in terms of equipment they knew and loved. Slip in a 12-gram bulb, slap in the magazine and pull the trigger, and the CO2 capsule is good for a few reloads too.

On board

Sighting systems and accessories can be as precision or exciting as you like. Pure 'match' target work requires match iron sights, with options on aperture and blade size, micrometre adjustments, orthopaedic-type stock



and muzzle weights etc. The more Triple P types use standard iron sights with limited adjustments. But where it gets exciting is the open arena, here the red dot sight is king, allowing fast target acquisition. These 'dot' sights come in a bewildering array of models and types.

Other mountable accessories include torches and lasers, which also have their place, with competition courses of fire to suit. OK a bit more tactical but don't knock it until you have tried it either! If you like there are even low-powered, long eye-relief pistol scopes, which are a bit different. I have even heard of a CO2 pistol fanatic who has a compact NV scope on board one of his collection!

And finally...

The following three mini-reviews give a taste of what's out there – and believe me, there is a lot to choose from, and we haven't even touched the dozens of spring powered models available!



Multiple Choice

Pete Wadeson tests the versatile Webley Alecto, a single-shot, variable-power manual pneumatic pistol

Of the pneumatic mechanical action air pistols on the market, I think there's no better than the Webley Alecto. I say this as not only is it one of the finest examples of engineering I've seen and used for an 'over-lever' action PCP air pistol, but also due to all the practical features it offers.

The all-black mainframe and grip make the Webley Alecto an imposing gun, in both looks and build. The open sights are combat design, with a raised square profile foresight, having red dot indent to line up in the square notch of the fully adjustable rearsight. At either side of the pistol are a pair of catches that allow the release of the over-lever for cocking. They have ridged sections that are ideal for a 'pinch and lift' operation using thumb and forefinger. Once 'unlatched' the pistol easily opens for the outward 'opening' stroke. This allows direct loading into the barrel's breech and as the air is put into the inner chamber on return, it's this closing stroke that cocks the pistol.

The top of the over-lever section is part railed for alternative sight mounting and a useful 3" length of Weaver rail runs on the lower section of the forend for accessories.

A stylish trigger guard protects the polished chrome plated trigger blade and auto safety lever. The latter is formed with a look of a four-leaf clover. Very easy to push off with the forefinger of the shooting hand or pull back if holding off a shot.

The grip is stylish and ergonomic, given the shooter a very comfortable handle to hold. It's dimpled to further aid



hold with forward finger ridging and an adjustable palm shelf. An adjustable palm shelf is another useful feature. A dedicated left hand grip is also available.

Operation, Priming & Firing...

Once released the over-lever action can be lifted fully up and outward where the 7.25" rifled steel barrel is held securely in the upper section of the mainframe – a familiar layout for this type of PCP air pistol.

The variable power system allows one pump to give a 'plinking' usable 3ft lbs, 2 pumps push the power up to 5ft lbs and a third only adds a measly extra ½ ft lb more in power. In my opinion this could be linked to the fact there's a built in 'dump valve' should you try to pump in more air for more power, it just lets the air go. You could say it's almost regulating, so best to use two pumps, then no matter what pellets are used it won't go over the 6ft lb legal limit.

Target Time

The highly adjustable 2-stage trigger can be set to almost any level of let off and travel.

Shooting the Alecto on one pump will soon have you shooting tight groups using the open sights out to 12-15yds. Add a superior sighting system, pump up the power and you'll be smacking knockover targets down right out to 45-50yds if your skill is up to it. And yes, you did read that correctly.

The Webley Alecto is undoubtedly a landmark air pistol, my only gripe is; wouldn't it be cool if they made a retrofit silencer!



Fun x 6

Jules Whicker tries the Aim-X Atomic Super 6 – Brocock's new multi-shot version of their popular pre-charged pneumatic pistol

I've had the pleasure of shooting both the original single-shot Atomic and the Super 6 multi-shot version of the handy little Contour carbine this year, so was at once on familiar ground with Brocock's new multi-shot pistol.

The test gun had Brocock's latest action; gone is the original combination of release catch and straight-pull bolt, and in their place is a more conventional bolt that runs in a groove cut into the R/H side of the receiver, with locking notches at each end.

The stainless steel bolt handle, meanwhile, is a distinctive elongated "peanut" shape. Its position on the R/H side of the receiver favours those of us of the south-paw persuasion, since it is more easily operated by the right hand, whilst the left hand keeps the pistol pointed downrange, than vice versa.

The Super 6 system

The new Super 6 multi-shot magazine system works very well. The magazine itself is a diminutive alloy cylinder with 6 chambers, an O-ring that sits in a groove around its circumference to keep the pellets in place, and a pair of bearings, front and rear, on which it turns. The .22-calibre magazines are anodised in an attractive "old gold" colour, whilst .177 magazines are red.

Six shots is plenty for plinking and keeps the magazine in proportion with the rest of the gun, as well as avoiding the scope clearance problems that beset bulkier, higher-capacity designs.

The magazine fits into the rifle via a pair of bearings, so with the bolt locked to the rear, the magazine can simply be slid laterally in or out of the breech cut-out. Once the shot has been fired, cocking the action for the next shot causes a ratchet to rise and engage with one of the "steps" in the side of the magazine, indexing the next chamber.



Short sighted

The design isn't perfect, as there's only just enough rail at either end to attach a scope ring - but nothing in reserve to adjust eye relief, etc.

It's a less critical issue on a pistol than on a rifle, but it was still a little frustrating not to be able to fit any of my red dot sights except a little Docter-style unit, and to have to resort to a single ring mount in order to fit a Bushmaster 2.5x32 pistol scope.

Maybe the best policy would be to rely on the open sights. These consist of a square rear notch that's adjustable for both elevation and windage, and a hooded front ramp with an orange fibre-optic "light pipe". Albeit a little coarse for target work, they're excellent for plinking, and, with practice, almost as quick as a red dot.

A pistol scope does give greater precision though, and with the Bushmaster on board, I was able to shoot half-inch or smaller 6-shot groups from a rest at 20 yards, time after time. The Atomic was producing muzzle energies of 4.5-5 ft/lbs, which delivered enough residual energy at 20 yards to drop and reset a Knockover target.

Keeping it quiet

The Atomic's barrel is threaded for a moderator, but the requires you to replace the fluted muzzle cap with a male-to-male adaptor in order to fit one of Brocock's light and compact Delrin moderators, or a half-inch-UNF alternative of your choice.

The stylish flutes of the muzzle cap are repeated on the filler cap, located at the tip of the air cylinder. This unscrews to reveal a quick-fill valve. A 200-bar fill will give around 30-35 good shots; about 5-6 magazines' worth.

Accuracy is aided by a Weihrauch barrel and a crisp 2-stage trigger which is adjustable for first-stage travel, second-stage pull weight and cant.

I think Brocock have a little way to go as regards the finer points of the pistol's design, but the fact remains that the Atomic is a delightfully accurate and impressively efficient pistol, and the supremely neat and reliable Super Six magazine system makes it better than ever.

Who's The Daddy

Pete Wadeson looks at the Umarex Walther CP88 to find out why it's one of the World's best selling CO2 pistol

Manufactured by Umarex the Walther CP88 has reached cult like status but with good reason. One being it was one of the first to come into the UK but more so because it is still one of the most efficient, fast handling and easy to shoot CO2 powered replica pistols. Based on the Walther P88 9mm Parabellum, it's faithful by way of feel, weight and features, even though some are for 'cosmetic authenticity' only.

Mainframe & Grips

The mainframe is all-metal and only adds polymer for the chequered grip plates. The top slide is accessed for pushing by a rib edged lever set midway on the left of the mainframe, just below the moving slide and above the axis of the trigger blade. The manually operated trigger safety lever sits well back on the pistol body above the grip and to the rear.

As with most Umarex manufactured CO2 pistols, the 12g liquid gas capsule is concealed in the handle under the left grip plate, which can simply be clipped off when a change of capsule is required. Once removed, you place a 12g CO2 capsule (neck up) in the housing, then tighten the brass retaining wheel at the base until the capsule is held 'tight' in the housing. To pierce the capsule you use the 'dummy' magazine floorplate as a lever; pushing it up to close which pierces the capsule allowing 'gas' to the internal valve, immediately priming for the first shot.

To load pellets you drop the slide catch and the top slide flicks forward revealing the magazine receiver. Remove the standard rotary Umarex magazine, load all 8-chambers with suitable pellets (flat heads are recommended) and place the magazine back in the receiver. Then manually 'pull back' the top slide to lock and secure it in the original closed position.



Operation & Performance

The trigger works in both single and double-action modes. Pulling back the hammer you can take considered single shots, however, this pistol built its reputation on its fast fire capability, lending itself perfectly for rapid fire air pistol competition disciplines. This is where you realise the standard sights are useful but some find limiting. You can remove the rearsight to bolt on one of two different sight rail options Umarex offer, these either allow a red dot to be fitted or a much longer rail is dovetailed for mounting a pistol scope. If you prefer, you can even up-grade with optional precise 'match' rearsight, also there's an add on front section available with longer barrel incorporating a dummy muzzle brake.

Alternatively if this is what you want from the start, the Walther CP88 Competition model has these fitted as standard.

Verdict

Using average weight competition 'flathead' pellets you get approximately 2ft/lbs at the muzzle and approximately 60 shots per 12g CO2 capsule.

The CP88 is accurate and with so many options to up-grade it's very versatile too. There can't be many fast fire disciplines where it still doesn't outshine its rivals.

Who's the daddy?



It's a gas

Pete Wadeson turns his attention to CO2 pistol shooting competition

CO2 pistols in general are low powered, which offers the advantages of being able to be used easily just about anywhere, with obvious regard to safety. What I discovered from former handgunners now using CO2 was that although they miss the real thing, what was on offer still required all their skills and kept them sharp and competitive.

GPP (Gas Powered Pistol)

Umarex are a major supplier of replica pistols like the Walther CP88, Berettas, SIGs, Glocks, in fact if there is a modern/real handgun you could guarantee a CO2-powered copy is available – even revolvers like the Smith & Wesson. Often the authenticity is uncanny. ASG pistols (Highland Outdoors), Crosman, Gamo, RUAG, Daisy and others are also a big supplier of CO2 pistols, but their models tend to be generic imitations of semi-auto pistols and revolvers.

GPP shooting competitions have sprung up with various rules. Some are accuracy based but most take advantage of the fast firing aspect of CO2 pistols for Action Pistol style events against the clock.

In competition CO2-powered pistols must use the 12g CO2 capsule and those that use rotary 8-shot (Umarex style) removable magazines are popular. If you like to test your skill with shooting fast and accurately - plus the buzz you get from competitive shooting - then these pistols offer an alternative to just 'plinking'.



Many say the glory days of Triple P shooting, Action Pistol, Man V Man etc., are over. Sales and competitors say otherwise, as any gunshop will tell you! Diehards keep many competitions running, which shows it still has a place. However, all have to come to accept the CO2s for what they are. If you think of them as toys, because you liked real handguns – then they may not be for you.

Practical Competition and Classes

In these events the shooter tackles competitive stages requiring varying round counts and different firing positions, against the clock. The appeal lies in the diversity of the courses of fire, which are different for every match. Targets vary in size, shape, position and material - metal, paper or frangible - from a variety of distances (usually from 3 to 60 yards).

Matches are open to all UKPSA members (contact below). Pistols of all types are on the increase, again mostly lookalikes of famous handguns but some already tricked out to suit certain events. Holsters are made by Escort Gun Leather, Price Western Leather, Brocock, Armex and other manufacturers with a vested interest in the sale of gassers and the like.

There are a number of divisions - Standard that incorporates open sights, holsters and magazines. Open with optical sights, barrel weights and compensators and Open-Plus for CO2 variants with high capacity magazines.

If you are thinking of buying a gun for these events take note that the safety catch must be used if fitted - as mistakes can happen in the heat of a course of fire. Revolvers like the S&W do not feature a safety but as they are trigger cocking, proper gun drills means the finger is never on the trigger until the gun is pointing at the target. So apply the safety and engage the brain at all times, these guns are not toys...

The UKPSA offer a Basic Practical Pistol Safety course, as there's a lot of fire and movement and holster work! They certainly take safety seriously - as it should be.

Iron Men

Iron plate Action Shooting (IPAS) is claimed to be the latest and ultimate action discipline, designed specifically for multi shot CO2 pistols. It's based on speed and accuracy; however one is no good without the other!

IPAS is good for those wanting to shoot rapid fire pistol within limited space and targets that are easy to construct, set up and clear away. It also appeals to the physically disabled as there is no movement required other than to draw the pistol. It was started in 2000 as an alternative to the Steel Challenge after the handgun ban. Competitions involve several stages where five steel plates either 10" or 12" or 12"x18" and set out at varying ranges. Different but challenging layouts need to be hit and each sequence is timed.

Each stage is shot five times and the slowest discarded, the remaining four being your score. It's fast, furious and fun. Check out their website for full details, but it's 100% a magazine-fed event and only normal lead pellets are allowed for safety reasons!

Each course of fire consists of between two and five plates, (one of which will be a stop plate); competitors are started by a shot timer's that will stop when the last shot has been fired. Interest and PR on the discipline is so high, there was actually a short course to try it at this year's British Shooting Show.

Umarex Boy's Club

As I was putting this piece to bed, I had a call from an organisation called the UBC (Umarex Boys Club.) They are well organised and do what certain other associations seem to have forgotten; keep it simple and fun. As latter groups can tend to over regulate on rules and equipment,



which can put potential members off. So they do it there way and it seems to be working as they have a growing band of followers. Paddy Egan is competition organiser and pretty much seems to be a driving force helped by equally keen officials.

HFT

Pistol shooters have also cottoned on to Hunter Field Target (HFT) competitions, and overnight, Pistol HFT was born. Similar courses as HFT are laid out, but obviously using appropriate targets and reduced ranges – they are set at 25m maximum and closer and all are a minimum of 35mm in diameter. You can use any pistols from CO2 to PCP and recoiling: there are also categories for open sights, scoped and red dot.



Plinking' great!

Air and CO2 powered pistols offer a fun form of informal target shooting - we look at what's on offer

Plinking is the simple sport of shooting at inanimate objects and paper targets. Although it can be done with any air rifle, it is the ideal sport for a low powered legal limit air or CO2 pistol. It's a pleasant and enjoyable way of spending an hour or two, and is often the first introduction into shooting sports.

What's on offer?

Air and CO2 pistols don't require a licence and their moderate power output means that they can be used in a garage or garden – providing that a safe back stop is used and no pellet or BB is allowed to stray out of the boundaries of your property.

There are three main types of air pistols:

- Spring/piston powered, manually cocked mechanical pistols
- Manually pumped or pre-charged pneumatic pistols (the latter requiring a separate compressed air source and charging gear)
- CO2 powered pistols that use disposable canisters of carbon dioxide



Some of these pistols – particularly the pneumatics – are capable of great accuracy, in fact they are used for Olympic class competition (you can see these in our Match Air Rifle & Pistol article), but the models we are considering here are generally just intended for plinking.

Spring piston power

The most basic air pistol is the manually cocked spring/piston type, and with these models it is you that supplies the power. They are divided into three main types; break-barrel, over-lever or side lever.

With break-barrel pistols the whole barrel is hinged at the joint with the body of the pistol, and when you pull it down and back a mechanical linkage draws back a spring and piston in the compression chamber. Over-levers work on the same principal except that the barrel sits on top of the pistol and is cocked by lifting it up and forward. All these pistols are 'single shot' so the loading is directly into the exposed breech before the barrel is returned to its 'closed' position.

Some spring powered air pistols are capable of



producing power close to the 6ft/lbs legal limit, which makes them a favourite for use against reactive targets like FT knock downs... or just for peppering tin cans!

Spring pistols can be had for under £25 from companies such as Sportsmarketing, right up to £280 or more for some of the more sophisticated high power pistols like the Weihrauch HW45.

Recoilless pneumatics

The biggest advantage of a pneumatic is that it is 'recoilless'. This simply means that there is no mechanical movement when you pull the trigger – unlike the internal movement of a spring-piston powered pistol. Therefore, when you fire a pneumatic pistol it's a lot easier to achieve accurate results.

There are three types of pneumatic pistols; single stroke pneumatics, multi-stroke pneumatics and pre-charged pneumatics (PCPs).

Most manually charged pistols are 'single stroke', which means that they only require one cycle of the cocking lever to achieve their full power potential. This results in their being fairly low power, averaging around 2 - 2.5ft/lbs, but they can be extremely accurate. Gamo make several examples of this type of pistol starting from as little as £100. Top end single-stroke pneumatics, like the Gamo Compact pistol and the Weihrauch are so accurate that you could use them as an introduction to precision 10m match shooting.

Multi-stroke pneumatic pistols – sometimes known as 'pump-ups' - require multiple strokes of an integral underlever to achieve maximum pressure. These pistols can be powerful as well as recoilless, as is the case with the Crosman 1377C American Classic. The downside to multi-strokes is that after a few shots they can get tiring to 'pump' to full power.

Precharged pneumatic pistols offer the best of all worlds, being powerful, recoilless and effortless to charge – as they are filled with compressed air from a diver's bottle or charged with an external manual pump. They power pellets in the same way as other pneumatics, but do not require manual charging for each shot, as the air cylinder stores enough compressed air for dozens of shots before refilling is required.

Falcon Airguns offer several models in their PCP pistols range, including multi-shot magazine versions. Deben Group Industries offer the FX Ranchero multi-shot pistol and Brocock have several PCP pistols including the multi-shot Rohm Twinmaster, match class target pistol and the new Aim X single shot PCP.

CO2 pistols

Carbon dioxide gas (CO2) is used to power a wide range of pistols from repeating pistols for rapid fire and accuracy competition, to cheap 'plinkers' for informal target shooting. Like pre-charged pneumatics, all CO2 pistols are recoilless.

Air pistols and the law

Although there has been a lot of legislation over the last few years regarding 'soft air' pistols, air cartridge revolvers, 'imitation' handguns, replicas and the like, it does not include the air and CO2 powered pistols that we feature here, other than the fact that all sales of airguns by shops must be done on a 'face-to-face' basis. The law can be complicated, but it is unequivocal on this point; any air or CO2 powered pistol that is designed to fire airgun pellets or metal BB's, is technically classed as a 'firearm', but as long as it has a muzzle energy of below 6ft/lbs, it is perfectly legal for an adult to own one without a licence – this includes CO2 models that look like 'real' firearms.

Virtually all CO2 powered guns are in .177 calibre, and are either chambered to fire standard airgun pellets and/or BB's. All CO2 guns use a disposable 12g container of CO2 (Carbon Dioxide), commonly called a bulb or capsule. The amount of shots that are obtained per capsule depends on the pistol being used, and the set power output. Between 40 to 65 shots is a broad average for pistols.

One of the biggest attractions of CO2 pistols is that they can be made to outwardly replicate 'real' cartridge pistols, resembling semi-auto pistols from Beretta, Colt, Walther and even Smith & Wesson revolvers. Crosman, Daisy and Gamo also make generic 'replica' looking CO2 pistols, but not specific reproductions of any particular brand.

Depending on model, CO2 pistols can cost as little as £65 for a simple Daisy Powerline 93 model right up to nearly £200 for something like a Gamo PT-80 Tactical complete with red dot sight, laser and moderator.

Targets and backstops

After you've chosen your gun, you obviously need targets and a safe place to shoot at them. Drinks cans are the obvious choice for free targets, or you can use any card or paper marked up with varying 'kill zones' by drawing around different sized coins for more 'precision work'. Ultimately you could use purpose made 'reactive' metal targets such as 'spinners' or various knock down re-settable targets.

Before ending this brief look at plinking it can't be stressed highly enough the need to be aware of safety at all times. Although using relatively low powered pistols, you'll need a good solid backstop placed behind your targets to stop pellets overshooting. An old door with layers of scrap carpet laid over them will deaden sound and also protect from ricochets.

Also consider your neighbours – stay safe, keep the noise down and act responsibly. Enjoy your plinking!

Gasssing On

Pete Wadeson takes a look at CO2 powered air rifles from plinkers to those capable of producing power levels suited to close to medium range hunting...

Although quite a few companies market CO2 powered air pistols in the UK, there are far fewer that sell CO2 powered rifles. This article is specifically dealing with the rifles currently available; both the low-power ones designed for the fun factor and also those rifles that create enough muzzle energy to be used by hunters who want the recoilless attributes the CO2 power source offers without the 'hassle' of running a traditional PCP air rifle.

Another String to Their Bow

Since acquiring the exclusive UK distribution of Umarex manufactured products Birmingham based Armex (also known for archery and crossbow equipment) are now major players in what is still a niche market. The selection of CO2 rifles offered is quite comprehensive, but the majority are variants based on the chassis of a specific model of rifle. They also have a couple of very nifty low-power replica 'plinkers' bought by many for the sheer fun factor and cosmetic authenticity.

Perfect Storm

First up is the Umarex Beretta CX4 Storm which quickly became a world success amongst CO2 powered blow-back-action rifles. An 88g CO2 cylinder is housed in the rear of the airgun and can provide over 200 shots. It uses a unique belt-type 30-shot pellet magazine clip that makes it fun, fast, and surprisingly accurate. It also features a single-stage trigger with manual safety, peep sight with height-adjustable front sight but also has a run of Weaver/Picatinny rail. The stock is manufactured from a glass-



fibre-strengthened polymer. Accessories available include a military style fore-grip/bipod and a Beretta branded optic.

H&K MP5

Next is the Umarex Heckler & Koch MP5 K-PDW - previously only available in the UK as an airsoft replica - this model has a number of technical features that are otherwise only found in the original.

Like the weapon it 'replicates', it has a folding butt that can also be removed by releasing the holding pins, allowing it to be replaced by the butt plate from the K version. Therefore buy this 'kit' and you get two versions.

A 12g CO2 capsule is located in the front of the butt section. A sensible feature is when the gun is put on safe the trigger is fully deactivated. It also comes with a mounting rail for scope use and a removable barrel 'compensator' with bayonet lock.

Hammerli 850 AirMagnum

Now we come to a rifle that changed the minds of many airgunners who never thought they'd want a CO2 powered air rifle - the Umarex Hammerli 850 AirMagnum. Many will remember this was the first production CO2 multi-shot air rifle powerful enough to be used for close to medium range hunting.

Since Armex have taken on distribution there have been a few changes made - one being that although manufactured by Umarex it is now under the 'Hammerli' brand name. Also there are different versions with numerical denotations after the rifle name classed as 'kits.'

First a look at the rifle itself; the action sits in a 'sporter' styled all-weather fully ambidextrous ABS stock with a grippy dimpled forend and pistol grip. The front section of the forend is designed so it can be unclipped to reveal the threaded connector for an 88g CO2 cannister to be screwed into. Once in place, the front section is re-attached to cover the power source but more importantly form a full forend. The side-bolt action runs a removable 8-shot drum shaped magazine, and other features include fibre optic enhanced open sights, and an adjustable single stage trigger with automatic safety. Optional extras now include a silencer adapter to fit a Walther silencer or any

other standard UNF threaded can of choice.

Kits available are the XT which includes rifle, Walther 3 – 9 X 40 scope, TMB adjustable Bipod and Umarex silencer; The Panther – Hammerli 850 AirMagnum XT Kit which includes all the previously mentioned accessories but with their own ‘Panther’ silencer already fitted. Also upon request they’ll ‘exchange’ the Panther mod and supply the same kit with the Backdraft silencer already fitted. Reason being this has to be done at the factory by their gunsmith. All models are available in .177 & .22 calibre.

Walther Classic Lever Action guns

Armex also bring us a touch of the ‘Wild-West’ with a selection of Walther Classic Lever Action guns. Styled on the traditional ‘cowboy rifle’ they have abbreviated hardwood stocks and are only available in .177 calibre. Powered by an 88g canister in the butt (early models used two CO2 capsules), the under-lever cocking mechanism with integral trigger runs an 8-shot rotary magazine system and they’re fitted with adjustable open sights.

All features are common to all the versions of this rifle, the only difference being their cosmetic appearance - variants include The Wells Fargo, Black Dust and the very attractive looking Steel model, so named due to the stainless steel finish on all metalwork.

The American Way

The mighty US based Crosman Corporation has always had a few CO2 air rifles capable of producing enough power for close to medium range hunting available in the UK. Now distributed by ASI the best known by far is the Crosman 2250B Ratcatcher. Interestingly this was developed from a popular pistol. It morphed into becoming a ‘rifle’ by having the single-shot bolt action placed into a very slim, lightweight and compact skeleton ABS stock and to keep it legal they added a longer barrel. It has a single-stage triggers and manual safety, plus open sights and uses a single 12g bulb housed in the front of the action. There are no rails for mounting a scope but Sportsmatch UK manufacture a set of special mounts called ‘Pro-Blox.’ These attach to the top of the barrel and due to the upper of the mounts having a standard dovetail machined into them allowing an optic to be fitted in a standard pair of



scope mounts. It’s only available in .22 calibre and is capable of producing approximately 10ft/lb depending on pellet weight so should only be used for (as the name suggests) close range ratting!

Such has been the popularity of the rifle, there’s now the 2250XL ‘outfit’ available. This comes complete with a new design steel breech with dovetails, scope mounts, 4 X 32 scope and a silencer adapter to allow you to fit a ‘can’ of choice. A nifty optional extra is a dedicated padded gunbag - the aptly named ‘Ratbag.’

Another recent addition is the Crosman Repeatair 1077 plinker. Styled on Ruger’s 10/22 rimfire rifle it actually imitates the ‘live-round’ guns semi-auto action by firing .177 pellets from the 12-shot rotary magazine as fast as you can pull the adjustable 2-stage trigger – sensibly the unit also has a manual safety. It takes power from a 12g bulb, has a synthetic sporter stock including basic open sights but also has rails for scope mounting.

Up And Up

Sportsmarketing (or SMK) CO2 powered guns are not given names but instead have alpha/numerical denotations. They’ve now progressed and up-graded certain models and have a useful amount of rifles on offer. All are bolt action single-shot rifles with adjustable open sights and scope rail. Available in both popular calibres they have single stage triggers with a ‘trigger lock safety system’ and most models including the QB78, XS79 and the thumbhole stocked TH78D are powerful enough to be used for close to medium range hunting. Incidentally while most of SMK’s models take 2 X 12g bulbs which slip into a chamber directly under the barrel the ‘XS79’ takes its power from an 88g capsule screwed into the shortened forend - clearly visible.

An interesting looking rifle is the QB78MATCH, although based on the ‘78’ action, it sits in a ‘competition’ style stock and has a match grade dioptre rearsight and hooded foresight assembly.

Due to SMK also importing the SWISS ARMS brand of air rifles, amongst that particular company’s roster of low power plinkers is a very authentic CO2 powered .177BB calibre firing Mini-Uzi replica named ‘The Protector.’ The metal and polymer construction plus metal foldable stock (weighing 4.8lb) give it quite an authentic feel - matched by it having a very realistic blow-back ‘recoiling’ semi-auto action that can empty its 25 shot ‘clip’ magazine – quick-smart!

Conclusions

If you thought the CO2 scene wasn’t as popular as it once was, I’d say think again. With so many diverse and interesting air rifles to choose from there’s quite likely one or maybe more that will capture the interest of a certain sector of the airgun shooting fraternity. Be that for fast fire ‘plinking’ fun use or - if powerful enough - to be used for certain types of pest control!

The Vital Ingredient



As with any firearm, the diet you feed it is reflected directly in the accuracy and velocity you yield from it, Bruce Potts looks at the not so humble airgun pellet

Matching the correct pellet to the bore size and a calibre is fundamental but terminal ballistics and performance are what really counts when choosing an airgun pellet for hunting. For FT, flat trajectory, wind bucking and accuracy are key and for plinking, well low cost!

The beauty with air guns is choice and there are only really four calibres to choose from, .177, .20, .22 and .25 but you do have a superb range of pellets of all sorts of configurations and styles and priced to suit any pocket or need.

People tend to spend lavishly on their rifles, scopes moderators and slings and only give the pellet a cursory glance. It's the final part of the jigsaw to all your effort and

money spent on kit and the first thing to hit your target. For the small fraction of pence it costs per pellet, it is actually the priceless part of any true air rifle shooting system.

Calibres

There is much debate which is the best calibre for air rifles and this will never end, it's the same with firearms too but what is important is a little knowledge into what is out there and what it is best used for.

.177 or 4.5mm in my teenage years was always the poor cousin to the .22, these days it is the king of the FT and HFT circuits and top choice amongst many hunters too. It is praised for its high velocity and corresponding flat trajectory, which helps hit small objects down range, as less trajectory compensation is necessary.

.20 or 5mm is the in-between calibre, popular in the USA, where many of the pneumatic pump ups like Benjamin or Sheridan made it popular. I like the .20 cal, as with my .20 cal centre fires, it offers the best of both



worlds in terms of ballistics. It pitches the velocity between the .177 and .22 cal and still keeps the required 12 ft/lbs legal maximum. Therefore the trajectory is not as flat as a .177 but not as rainbow-like as a .22 but the problem is matching .20 pellets to .20 cal barrels and limited pellet choice.

.22 or 5.5mm was always termed the hunter's choice and still remains the go to pellet for most air gun hunters. There is a phenomenal range of pellets in this calibre and it delivers good accuracy, energy and performance and as such will completely please any would be buyer. Down range performance and energy is good despite its more covered trajectory compared to the .177 calibre.

.25 or 6.35mm was really considered an old dinosaur pellet size and really a throwback to the days of the Webley Service rifle and the like. However, to the enlightened it is a really great performer, if ranges are kept sensible. I love this calibre and use it as a standard and FAC rated air rifle hunting tool.

Yes it has a slow lumbering gait and a trajectory like the plummeting oil prices but when it hits a target, its larger cross section really delivered all its energy into one concentrated spot, for sheer knock down power and not penetration.

Weights per cal

Another consideration is the typical weights that each pellet calibre actually is capable of shooting. This may well have a standing on the calibre and type of pellets you choose.

- .177 cal typical has a pellet weight range of 7.0 to 10.5 grains
- .20 cal is offered in pellet weights of 11.0 to 16.0 grains
- .22 cal can range from 12 to 23 grains weight.
- .25 cal pellets range from 19.0 to 31.0 grains

You also have now have to consider the velocity level at which the pellets are to be shot at. Standard velocity or energy levels are 12 ft/lbs energy and so heavy weight pellets may struggle to reach this energy figure and thus have a low velocity and curved trajectory, despite possibly still being accurate.

Heavy pellets work best in FAC rated guns and really the sky's the limit as we have seen with Daystate's Wolverine .30 cal, shooting 50 grain pellets at 100 ft/lbs energy!

Pellet make up

Pellets are longer just made of lead. Today, the possibilities of modern plastic and alloys has given the air rifle shooter a different tack, as it where, to how to choose air rifle pellets for their guns.

Most pellets are made from lead but they have to have a hardener, as pure lead is too soft. To the lead, small quantities of antimony is added to harden it, which not only helps in down range performance but also stops



the pellets from being too misshapen when produced and stuffed into your hunting jacket.

Lead also has a good weight to size ratio i.e. for the size, the pellets are heavy, which really helps retain energy down range and also fight off those killer side winds that steer your pellets off line.

Today, there has been a tip towards non-toxic alternatives to lead. Synthetic or lead tipped and plastic body pellets have been available for many years now and continue to offer alternatives to lead pellets.

However Zinc/Tin alloy pellets are now widely available and becoming popular and increasing available in a myriad of style and weights. These non-toxic pellets are light for their size but accuracy, if matched to the correct sized bore, can be very good.

That's another important point, is that regardless of materials used, a pellet must fit the bore precisely.

That's why many pellet makers make one style of pellet in differing sizes. ie H&N FTT in say .177 cal can be bought in 4.50, 4.51, 4.52mm versions, so the small change in diameter can be matched to your actual rifles bore and thus achieve the best accuracy.

Types

Broadly speaking, there are five pellet types or shapes to consider for your plinking, hunting or target use.

Wadcutters, Domed, hollow points, pointed or other i.e. synthetic/lead free.

Wadcutters:- Here is the domain of the target shooter and 10 metre target aficionado. Their flat front end cuts cleanly through paper and thus gives a clear indication of the score achieved. Also, their design does not really influence their performance down range, as most shooters use these pellets indoors, with no cross winds and at short range i.e. 10 metres. However certain pellet types can also be very handy for closer range hunting, due to their flat head structure, that deliver very good terminal ballistics.

Typical pellets available are: - Although wadcutters are the domain of the target shooter with most pellets in .177 cal only other brands in both calibres make excellent close range hunter.

RWS Hobby, RWS R10, Air Arms Ultimate, Crosman Match Pell, Geco Flat, H&N Match.

Domed

These are the mainstay of the most popular pellets available and their round or domed nose affords good flight characteristics down range. Compared to a flat head pellet, they fly flatter, retain energy better and are less affected by wind.

Typical pellets available are: -

This is the largest section, as it encompasses plinking and hunting pellets.

As such, most major manufacturers produce pellets in this class range.

Air Arms Fields, Air Arms Diabolo Hunters, Air Arms Diabolo Field Heavy, BSA Pylarm, BSA Bullet, Bisley LRG, Bisley Superfields, Bisley Magnums, Crosman Premier, Crosman Accupell, Daystate FT, Daystate Emperor, Eley Wasps, Eley Magnum, Gamo Hunter and Pro Hunter, H&N FTT, H&N Barracuda, H&N Silhouettes, H&N Sniper Light, JSB Exact, Logun Penetrator, Milbro Rhino, Napier Power Hunter, RWS Superdomes, RWS Superfields, Webley Mosquito, Webley Lazapell, Weihrauch Magnum and Weihrauch FT Special.

Plinking pellets include Marksmen, Eley Wasps, Lanes Bulldog, Milbro Caledonian,



Hollow Point

Hollow points pellets are marketed as expanding, hard hitting hunting pellets. Truth is, at the velocities most air rifles shoot these pellets, they hardly expand at all. But just like the flat top wadcutters, they can hit hard, due to the cross sectional area up front.

Typical pellets available are: -

Beeman Crow Magnum, Bisley Pest Controls, Crosman Destroyer (flat, hollow and pointed all in one), H&N Barracuda Hunter Extreme, H&N Hollow Point, H&N Grizzly, RWS Super H Point.

Pointed

Again, aimed at the hunters and termed deep penetrators but in reality the small difference between a pointed tip and that of a domed head has little consequence, it is better to get a pellet that is accurate. The only really good pointed pellets are those in the other section i.e. composites.

Typical pellets available are: -

Beeman Silver Arrow, Bisley Premier, Crosman Powapell, Gamo Zombie, H&N Diabolo Pointed, H&N Hornet, H&N Red Scorpion, H&N Spitz Kugeln, RWS Superpoint, RWS Superpoint Extra.

Other

Here I would term, lead free, composites and speciality pellets.

Plastic skirts and alloy tips are nothing new but they can be surprisingly good to shoot and there is a new wave of lead free or tin pellets from major manufacturers like RWS and H&N.

Prometheus Paragon and Dynamic (composite), H&N Barracuda Green, H&N FFT Green, RWS Hyper composite, RWS Hyper Max Tin, RWS Hyper Dome Tin,

Conclusions

With so many makers, styles, weights and dimensions, it is not at all difficult to achieve the level of performance from your air rifle that you need with modern day pellets.

I would recommend trying at least four differing brands to determine what your rifle likes and not just going for the one your local gun shop recommends.



Pellet Selection

What's The Best Type?

Bruce Potts, our very own airgun boffin, looks at various styles of airgun pellet and how they perform downrange

The most common form of airgun pellet construction is one of a domed head, but what advantages do a flat, pointed or hollow pellets offer the air gunner, if any? Flats are usually used as Target ammo, to enable a clean edge to be cut on paper to give a clear indication of score, but what happens on a rabbit? Similarly, does the pointed pellet offer more penetration as one might expect and do Hollow points really expand on target? I have been given all sorts of variations of answers to the above questions and so decided to find out for myself what each pellet's characteristics were like when fired at ballistic putty at 30 yds. I chose only the .177 and .22 calibres, as this represents the most common calibres that one is likely to encounter and chose Accupells for domes, RWS Hobbies for flats, RWS Superpoints for pointed and Bisley Pest Controls for hollows.

I used a tuned Weihrauch HW35E in .22 and Air Arms Prosport in .177 for the tests and represents what a shooter would expect from shooting differing weights and styles of pellets from a spring powered air gun.

The All Important Results

The Domes

The domed .22 pellet started out at a healthy 603fps (11.3ft/lbs) at the muzzle and only reduced to 515fps (8.3ft/lbs) at 30 yds; that's a 73% retention in energy. Penetration into the clay was 5.55 inches, with a good, regular channel and pellet direction. The domed pellets counterpart in .177 were better, as expected, with a initial velocity of 801fps



(11.1ft/lbs) and at 30 yds it was still speeding along at 697fps (8.4ft/lbs); that is an energy retention of 76 %. Penetration was better than the .22, at 7.15 inches due to its smaller size and higher velocity. Penetration for the .177 was the deepest at 7.15 inches and again straight and true.

The Flats

The flat nosed pellets reacted as predicted, with both calibres; i.e. starting off at high velocity compared to the other pellet configurations, due to their lighter weight. But at 30 yds, reduction both in velocity and energy was significant. In .177, 822fps down to 572fps and 10.2 ft/lbs down to 4.94ft/lbs; that's an energy retention of only 48 %. The .22 was a little better at 633fps down to 502fps at 30 yds and 10.7ft/lbs down to 6.7ft/lbs; 63% retention at the 30yard mark. Retention of velocity and energy figures were obviously better in the larger, heavy pellet as it has a better ballistic coefficient than the little .177. But overall results for flat nosed pellets was due to the non-aerodynamic configuration of this pellet's design, which was also reflected in the penetration tests, as there was only 3.00 inches of penetration in .177 and 3.5 inches in



.22. However, as a short-range pellet that gives up all of its energy on target, as it does not over penetrate, it is one of the best.

The Points

Next came the pointed pellets that some people think penetrate more than normal pellets: are you in for a surprise? It was clear to see they were not as good as a standard dome pellet design. Velocity and energy wise, the 8.2 grain .177 pellet started out at 776 fps and dropped to 563 fps at 30 yards; with an initial energy of 11.0 ft/lbs and 30 yard value of 5.8 ft/lbs. There was also a much more marked swerving of the pellet path as the pointed end ploughed an erratic path through the ballistic putty. The .22 was the same, the pellet deviated a lot but did penetrate 4.5 inches, not as much as the domed pellet and the 580 fps velocity dropped to 480 fps at 30 yds and the energy dropped from 10.9 ft/lbs to 7.5 ft/lbs.

The Hollows

Hollow points in .177 cal started at 753 fps and finished at 30 yards at 575 fps; that's a reduction from 10.7 ft/lbs to 6.3 ft/lbs energy, some 59% retention. Penetration was only 3.55 inches deep. Whilst the .22 equivalents started at 511 fps for 11.21 ft/lbs and at 30 yards dropped to 419 fps for 7.1 ft/lbs (63% retention) so greater retained energy due the extra weight providing momentum, despite slower initial velocity compared to the .177 version. This pellet penetrated slightly better at 3.75 inches.

Reflections

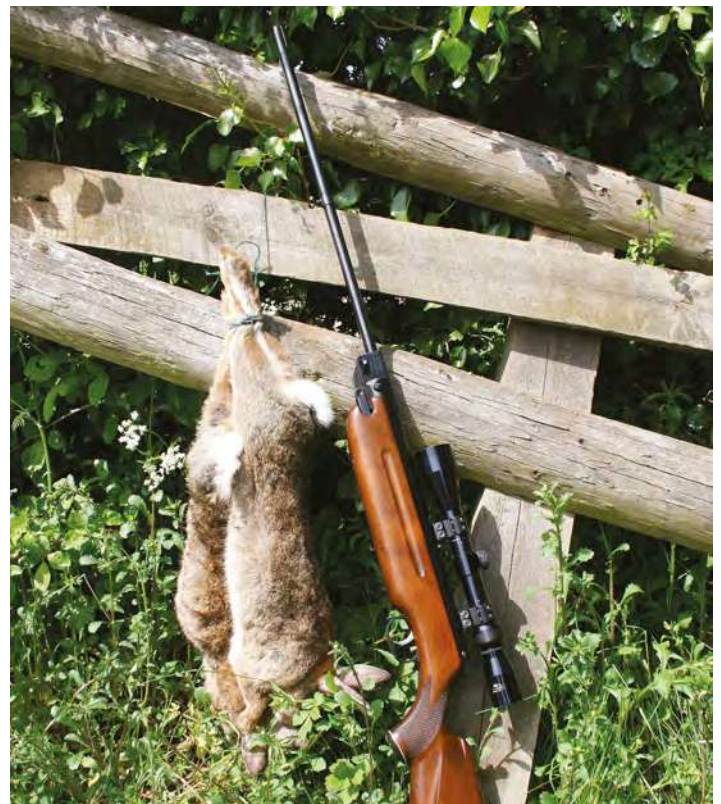
Obviously, ballistic putty is not live quarry, as there is a lot of tissue and bone to penetrate and stop a pellet's flight path and a larger .22 pellet may connect with more obstacles on the way in than the .177 and that is why .177 seem to penetrate more in real life?

The best way is to look at the wound channel, as this shows very nicely how the pellet really performed. The domed pellets both had reasonably deep channels but very long length, 0.55" deep for 3.25 inches in .177 and 0.70" deep for 3.00 inches in .22.

The flat nosed pellet in .177 was 1.00" deep for 1.85 inches length and in .22 calibre was 1.20" deep for 2.0 inches long. So much wider channels in both calibres and stopped much quicker in the Ballistic putty, which is why the channel was wider, as the energy was shed quickly as the flat head hit the putty. You could hear the "slap".

Similarly, the hollow points, with their blunt end and small cavity, acted like a flat head. In .177 penetration was only 3.55 inches and in .22, 3.75 inches but both had nice wide wound channels at 0.80" and 0.85" respectively, although the length of the .177 was longer at 2.15 inches compared to the .22 at 1.75 inches. The .22 dumped its energy quicker.

Finally, the pointed pellets did penetrate second best in both calibres but both also swerved off course badly and



the wound channels were not much better than the domed pellets. The .177 was 0.62 deep for 2.5 inches and the .22 was 0.65 deep for 1.75 inches. So no advantage over the domes or flat heads really.

What should be clear is that flats are good for close range, domed are the best all rounder, as energy retention coupled with flat trajectory, and as for the pointed, no comment. Hollow points fall somewhere between the pointed and flats. Another important consideration is pellet deformity, as the flats and hollow points are soft lead and squashed down nicely in the putty, to give a bigger surface area and hence sheds all its energy on target in a small space of time. The domed pellet bases blow out, giving a good seal whilst in the bore of the gun and hence good external ballistics.

Conclusions

Firstly, spring powered air rifles will never shoot all weights and styles of pellets at the same velocity or energy, so choice of style of pellet can make a big difference as seen. So, you can either choose the best all rounder or pick a specific pellet for one particular job if you like, i.e. flat head Hobbies for close range rats perhaps.

They will also shoot to a differing point of aim, so sight adjustment will be needed and these air rifles, although a little below the maximum 12ft/lbs energy level the comparison between the pellets is valid.

Obviously, ballistic putty is not real 'quarry' but it hopefully gives some ideas as to the best pellet for your air rifle and what sort of energy retention levels at 30 yards, where a pellet will actually hit your quarry and what to expect and the penetration that is possible.

Regardless, never shoot beyond your capabilities and always aim for a head shot for humane results.