

Collector

Airgun

issue 3



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Pneumatic duo: the Cantarinis

Long-time collector and airgun writer Larry Hannusch at last reveals the extraordinary story behind his acquisition 20 years ago of this remarkable matched pair of butt reservoir Austrian Girandoni-style repeating air pistols, apparently made by the master gunmaker Joseph Contriner.

Over the years, I have had the immense pleasure to see and handle some of the finest antique air arms extant. Certainly, many of the most magnificent examples are safely

tucked away in museums. But there are still enough beautiful specimens out there in private hands which can afford us the opportunity to personally handle and really get a

first-hand sense of the high level of art and workmanship created by some of the old masters. I'd like to present this awesome matched pair of repeating Cantarini air pistols as exhibit A.



Figure 1: These beautiful Austrian repeating air pistols illustrate the pinnacle of a pneumatic airgun maker's skill and artistry, dating from the early 19th century.

By way of a brief introduction, this pair of air pistols are technically defined as pneumatic repeaters, which means their power source is high pressure air which is stored in a reservoir to be released upon demand to fire the weapons. The air reservoir on each pistol



Figure 2: Both air pistols are essentially identical in appearance and dimension, with only a few small detail differences seen in the decorations.

is housed within the hollow metal grip of the piece. A percentage of the pressurized air within the reservoir is released upon each shot, allowing multiple shots to be fired with a single charging of the pistol. The pistol is further defined as a repeater in that it is fitted with a tubular magazine holding a number of lead balls which are readily available for continued firing without the need to reload.

Before we get into the specific details about these pistols, I'd like to give a little "back story" about how these remarkable air arms came to reside in my safe deposit box for now these almost 20 years. It is a true story launched

with a friendship, but soon other subsequent events spiraled downward, creating anguish and the need to make tough decisions. This is one of those collecting life lessons that reminds us that a deal is not done until both parties complete their respective commitments. Though it has been a couple of decades since all this went down, I can still recall the details as if it were yesterday.

Back in the early days of Tom and Edith Gaylord's "Airgun Forum" internet hangout about 20 years ago, there was not a lot of good airgun information out there on the world wide web. This was a time before I had even gotten introduced

to its potential (I think we ourselves had only then just recently obtained electricity). As their forum monitor, Edith had received a request for information about a pair of antique air pistols that an individual had come across in an estate liquidation. Edith and Tom graciously decided that I should get involved to help, because there was always that possibility that the air pistols might be available for sale. Not having an internet connection, they gave me his phone number. I quickly called him on my black rotary telephone to begin the process. He soon sent photos and I knew I was hooked.

I learned that this special pair of air pistols had come out of a



Figure 3: Each of the Cantarini marked air pistols display a high degree of artistic embellishment with the use of gilding, engraving, and gold inlays throughout.

longtime firearms estate collection in Minnesota and apparently had not seen daylight in aeons. The gentleman indeed was interested in selling them if he could get HIS price. I might add that his price tag reflected an amount well north of five figures, and this was 20 long years ago. I didn't even know that numbers could get that big! But I sensed that this could possibly be a once-in-a-lifetime opportunity, so I agreed to his terms. To come up with the funds, I knew I would have to beg, borrow, and steal...borrow some more. I sent him a substantial cheque as a down payment along with a letter reiterating the terms of our agreement, along with the promise that the rest of the cash was to be surrendered when he personally delivered the pair to me

in person in about a month. (We had both agreed that shipping them was too risky).

I called him in about a week to make sure that my cheque had arrived. It had, and he had deposited it. Phew... so far, so good. He was planning to make the long trip down to see me in a few weeks as I believe he had family in my area. The transaction date was firmly decided, and it looked like we were ready to go. Anybody know what it is like to go without a good night's sleep for a month?

The day finally arrived as a crisp, clear January afternoon. We cordially greeted and exchanged pleasantries. He had with him these beautiful antique air pistols, and I had my old

rusty wheelbarrow loaded with cash. What could possibly go wrong? He then revealed that on his way down to see me and deliver my prizes, he had stopped for the weekend at a large national gun show. Inexplicably, he had shown this pair of special air pistols to several major dealers at the show to ask their opinion of value. Yikes! He then proceeded to tell me that after these discussions, he had decided that he could not sell them to me at our agreed upon price. Are you kidding me?! We had a verbal and written deal! No matter about our deal... he insisted that he needed more money.

I was totally tapped out, as I desperately explained to him. I had no more resources left... certainly none available in such short order.

He seemed genuinely remorseful that I was going to lose them. Of course, I appealed to him under the old adage that "a deal is a deal". No matter... our deal was off.

He then asked if I had any other special antique airgun that I could offer him to "balance" the deal. I was in such shock and desperation that I agreed to let him pick something right off of the wall of the collection. He chose a nice marked, full stock German crank rifle (including the original crank) with most of its early brown finish as a sacrificial lamb to complete our pistol deal. Assuredly, I could have taken the righteously indignant path and demanded that he legally honor our original agreement. Sure, I could have,

but then you, dear reader, would probably be reading here about a nice German crank rifle instead of these Cantarini air pistols. To the man's credit, at least he didn't sell them outright at the gun show. Such is life and the consequences of the decisions we make along the way, both good and bad.

So let's get back to studying the pistols themselves. As mentioned, they would be defined as butt reservoir (grip) pneumatic repeaters. Specifically, they would be called Girandoni air pistol repeaters because of the mechanical design featured as the repeating system. Within this design, a transverse moving breechblock is used in conjunction with gravity to move

the round lead balls from the magazine tube into the pathway of the expanding air through the breech of the airgun. An 18th century Austrian gunmaker named Bartolomeo Girandoni (alternate spelling Girardoni) is credited with the invention of this remarkably simple yet reliable design. The standard reference work *Der Neue Stöcke* lists Girandoni as domiciling in Cortina d'Ampezzo (and later in Vienna) from 1744-1799.

The Girandoni breech design was used in his Model 1780 Austrian Military air rifle. The Model 1780 used a hollow conical metal buttstock to act as the air reservoir. Today, this type of airgun using this conical buttstock reservoir is typically



Figure 4: Both air pistols are essentially identical in appearance, with only a few small detail differences seen in the decorations. The coats of arms seen at the top of each receiver are slightly different in theme. Please note the 10-shot magazine affixed to the right side of each pistol.

referred to by collectors as an Austrian butt reservoir airgun, and were made both as single shot and repeating air rifles.

The work of Girandoni and his apprentices on the Austrian military contract for his powerful repeating air rifles was a closely guarded operation by the Austrian government. It became apparent after some years that the military air rifle project was hopelessly behind in the fulfillment of the contract. And coupled with the recurring problems of breakage in the field, the government air rifle project was finally closed around 1800-1805 after approximately 1500 rifles were produced.

This left the door wide open for the previously employed air rifle

apprentices to strike out on their own to produce specimens for affluent civilian clientele. So early in the 19th century, we start to see quite a number of high quality Girandoni style repeating air rifles from talented Austrian gunsmiths such as Joseph Lowentz (Lowenz), Joseph Schembor, and Joseph Contriner (Cantriner), among a host of many others. The design was soon duplicated in other countries by talented gunmakers such as Samuel Staudenmayer and H.W. Mortimer in London. One prolific Austrian maker, J. Schembor, actually made butt reservoir rifles in both Vienna and later in London, and Schembor butt reservoir rifles will be found today marked with either locale.

In rare instances, a few of these ambitious gunmakers also created

repeating air pistols using the Girandoni breech design. But these air pistols are incredibly rare relative to the number of repeating air rifles produced. Generally speaking, it has been estimated that the ratio of pneumatic reservoir air rifles encountered (themselves not a common air arm) compared to pneumatic air pistols may be on the magnitude of 40:1.

When it comes to the highly embellished, high art examples of the Austrian butt reservoir airguns, it is generally conceded by collectors today that Joseph Contriner was the reigning king of them all. Not only did he create some of the most incredible pneumatic masterpieces of all time, he also created more high art examples of this genre than any other maker known. Understanding



Figure 5: The left sideplates of both pistols are beautifully decorated in matching form as well.



Figure 6: The view from below the pistols shows the nicely figured burl walnut stocks in eye-catching contrast to the engraved and gold-plated triggerguards, finials, and ramrod pipes.

the remarkable nature of Contriner's work is useful to helping us explain the origin of the name "Cantarini" found on this superb pair of repeating air pistols. I have never encountered any sources which list Cantarini as a gunmaker of any type of weapon. We'll come back to that point a bit later after examining the details of these beautiful pistols.

Both pistols of this pair are identical in dimensions. Each has an overall length of 13 inches and weighs 2.8 pounds. The deeply rifled barrel is seven inches in length, and has a bore caliber of about .40". The magazine tube which lies along the right side of each pistol measures four inches in length, which translates to a magazine capacity of 10 shots. The sights are quite simple, consisting of a small blade front sight and a fixed rear

sight notch cast into the top of the receiver.

The cast brass receivers are deeply chisel-engraved in relief and beautifully gilded. In fact, all of the brass components, including the triggerguard, ramrod pipes, thimbles, and muzzle cap are all gold-plated. In addition, all of these gilded elements are ornately engraved as well. The swell center triggerguard is foliate engraved in the body, completed with ribbon borders, and is terminated at its forward end with an engraved, stylised pineapple finial.

It appears that all of the steel components such as the barrel, sideplate, lockplate, and magazine tube were left in the white, probably to accentuate the white and yellow gold ribbon inlays and floral motifs.

These intricate gold inlays are found on the breechblock, barrel, sideplate, and hammer. The horizontally articulating breechblock itself is retained in position by two fancy fasteners engraved to simulate a quadrant of four flowers complete with gold center stamens!

The hammers are artistically sculpted in full dimensional form with long ears at the top for cocking leverage, and display gold inlaid flowers along their faces to set them apart from the ordinary. However, it would be difficult to describe anything on these pistols as ordinary.

The aforementioned magazine tubes are each fitted with a long leaf spring affixed to the outer right side. This spring terminates its rearward end on the side of the breechblock



Figure 7: With the grip reservoirs removed, the pistol markings on the number 2 specimen can be seen. Also visible is the firing pin positioned within the centre of the air passage cavity in the receiver. A close inspection at the 9 o'clock locations on the receiver faces will reveal the locking pin for the reservoir.

which forces the breechblock to its battery position to the far left of the pistol under normal rest conditions. The forward end of each magazine tube is fitted with a pivoting metal

cap which must be rotated to load the pistol, and then replaced over the tube to retain the lead balls from rolling out. Unfortunately, both magazine tube caps are now

missing their retainer springs. The magazine functions as a gravity operated apparatus to feed balls to the breechblock cavity when the muzzle is tipped upwards.



Figure 8: The front faces of the grip reservoirs are each drilled with three holes to allow the indexing and anchoring of the grips to the receivers.



Figure 9: Once the grip reservoir is removed from the pistol, it is threaded onto the top of the pump above the ebony handles. The small steel plate is placed beneath the shooter's feet to secure the pump during the air charging procedure.

Each lockplate is engraved with a flag banner scene directly below the hammer. Within this flag engraving is a small, circular, gold-filled emblem, or poinçon, displaying the script initials "J.C.". Further forward on the lockplate is the gold-filled marking "in Wien" (translated "in Vienna") to state the gunmaker's city of origin.

We find that each pistol features a tapered, wooden ramrod capped with a brass tip. As these pistols are obviously breech loaders, the ramrods simply add familiarity to the arms, as well as serving to aid in the possible dislodging of an errant ball stuck in the barrel. The taper of the ramrod allows for friction anchoring within the thimbles. Each pistol is stocked with a single piece of nicely figured burl walnut that is shaped

but not carved. The base of the hollow grip reservoir is bulbous in shape to give a better purchase for the shooter in addition to increasing the size of the reservoir and thus increasing the shot capacity. The reservoir is constructed of thick sheet steel which is brazed along two longitudinal halves. This joint is further strengthened by a strip of metal brazed onto the reservoir along this seam.

The front of the reservoir is fitted with a brass valve body containing a horn-tipped valve stem to seal the pressurized air stored within the grip. This valve stem serves a dual function in that it is the check valve for charging the reservoir with the pump, and also serves as the firing (or exhaust) valve in releasing

the pressurized air during the firing cycle. I measured the grip reservoir's storage capacity at 90cc (5.5 in³) with the complete valve body in place. Each of these grips has been professionally recovered in black Moroccan leather to duplicate the original covering. However, as a side note, some of these antique pistol reservoirs have been encountered finished in either maroon leather, or had the steel itself painted in a mottled, mosaic pattern.

To charge the pistol with air, the grip is first unthreaded from the receiver, and then it is screwed onto the assembled hand pump. The complete pump consists of the pump tube and rod with metal piston head, the foot pad which is held down under the shooter's foot, and the fancy ebony handle



Figure 10: The small engraved button near the back of the sideplate is used to anchor and index the grip to the shooter's preferred angle. The bypass button (rod) can be plainly seen protruding from the top of the receiver.

which is used to move the pump up and down for pumping once the reservoir is attached to the top of the assembly.

It would take several hundred pump strokes for the reservoir to be fully charged to an estimated 400-500 psi of high pressure air. This probably allowed for about 10 strong shots. Unfortunately, some of these early air reservoirs have been known to rupture under the stress of charging. So due to the historical importance of these pistols, I am letting caution overrule my curiosity regarding the exact technical details of the charging pressures and shot count. I had to machine a new firing pin and notch years ago for one of these two pistols which came incomplete, and I cannot fathom how difficult

and disheartening it would be to fabricate an entire grip reservoir. My guesstimates will have to suffice here in lieu of solid data.

Once the reservoir is fully charged, it is removed from the pump and threaded back onto the pistol's receiver. The magazine tube can then be filled with 10 lead balls (plus one extra ball in the breechblock if desired). The muzzle is pointed upward to allow gravity to pull the balls down against the breechblock. The shooter then uses his offhand to push the breechblock fully to the right (against the tension of the magazine leaf spring), allowing a single ball to drop into the tapered .40" cavity. The block is then released, causing the leaf spring to force the breechblock back fully to

the left, which in turn brings the ball held within the block's cavity to be aligned with the bore. This square, steel breechblock sliding within the square, steel channel of the breech and barrel is so carefully machined that it creates a near perfect air seal. Amazing!

Once charged and loaded, the cocking hammer is pulled back through two distinct clicks as the tumbler with its wedge contacts and travels over the sear. The mainspring is quite stout, and the cocking force is not insignificant. This helps explain the gunmaker's use of an extended vertical spur on the hammer to give additional leverage for cocking. Though the firing energy from one of these pistols would be quite less than that found from

an Austrian butt reservoir rifle, the pistol's power generated from its massive .40 caliber projectile would still be substantial. At close range, I have no doubt that an accurate shot delivered to the mid-section of a bad actor in a crisis encounter would inflict a mortal wound to the miscreant. And after that, our pneumatic hero would still have nine more rapid, potent rounds at his immediate ready should the need arise to deal with the thug's misguided friends. Now that is some serious (and attractive!) firepower from 200 years ago!

Both pistols of this pair are essentially identical, with two exceptions. First, we find that the high relief coat of arms that is chisel-engraved on the top of the receivers are slightly different. Pistol number "1" has the coat of arms featuring a centerpiece of a shield and drum within the flags and spear. Pistol number "2" has a centerpiece featuring two cannons, a helmet, and a suit of armor among the flags and spear. How did I differentiate

the number of each pistol? That is the second difference between them. The second air pistol is marked "No 2" both on the back face of the receiver, and on the front face of its matching reservoir.

There are two small features found on both pistols that are worth noting. On top of each receiver is a small, spring-loaded rod protruding straight up from the pistol. This item is referred to by collectors as a bypass button or let-down lever. This small rod is the top of the bypass button.

Within the design of an Austrian butt reservoir airgun, whether it be a rifle, shotgun, or pistol, the function of the falling hammer (cocking piece) is the same. All of them have a horizontal wedge attached to the side of the tumbler that is connected to the hammer. This wedge catches a notch in the firing pin assembly to drive it rearward to knock open the reservoir's valve for a fraction of a second. This allows the high pressure air that is stored within the

reservoir to escape and expand and travel through the hollow channel in the receiver to propel the lead ball waiting within the pocket of the breechblock. That firing cycle can then be rapidly repeated.

The bypass button comes into play in that the Austrian airgun does not know or care if the hammer is falling rapidly from the force of the mainspring as a shot is being taken, or if the hammer is lowered slowly to void a shot: either way the wedge will make full contact with the firing pin's engagement notch. The Austrian airgun depends upon the stored energy of the mainspring creating enough kinetic energy in combination with the mass of the hammer to overcome the air pressure forcing the valve head shut. Under this scenario, the valve is knocked rearward and open while it normally would remain shut. Without the momentum of a rapidly falling hammer, the mainspring usually does not have the power to open the valve unless the reservoir pressure is somewhat depleted. In



Figure 11: The pivoting door at the front of the magazine tube is swung open to allow the loading of ten .40 caliber lead balls. The small (and fragile) spring retainer holding the cap in position is missing from both specimens.



Figure 12: The muzzle of the Austrian repeating air pistol reveals a very impressive set of deep rifling within the .40 caliber bore.

this case, a slowly lowered hammer can allow an unintentional firing of the weapon.

The solution to this issue was that gunsmiths learned to cut a deep slot in the tumbler as a safety notch. In either case, the bypass button allowed the lowering of the hammer. Depressing the button down forced the spring-loaded firing pin notch assembly to be pushed below the reach of the arc of the tumbler's wedge. The earliest Austrian airguns, such as the true military Girandoni air rifles, are not fitted with this bypass function.

The second interesting detail seen on both of these pistols is the raised round button found on the sideplate near the reservoir junction. This finely engraved button slides back and forth about 1/4 of an inch. It is used to index the angle of the grip

reservoir in relation to the receiver. Each reservoir has three small holes drilled in its face which will mate with the pin operated by the sliding button. In this manner, the grip can be locked in the desired position for firing, and is slid forward to release its anchoring hold to allow the reservoir to be removed for recharging. This feature is only found on some Austrian pistols, but never on the Austrian air rifles. This is because it is not needed on the rifles, as the conical buttstock is symmetrical around its circumference.

The reproduction case housing these fine pistols was created by a master case maker after a considerable amount of research. He finally located an original cased pair of Joseph Contriner flintlock pistols to pattern the outfit to historical correctness.

Why use the Contriner cased set as a pattern? Both of these air pistol's octagonal barrels are clearly inlaid with the name "Cantarini"...and inlaid in gold wire, no less. What is the connection? As was mentioned earlier, there is no known record of any gunmaker named "Cantarini" from this time period or any other, much less a skilled gunmaker who would be capable of creating such masterpieces as this pair of air pistols. There is no doubt in my mind that these magnificent high art air pistols are the work of the master airgun maker Joseph Contriner of Vienna, Austria. They were assuredly created under the custom directive of a very wealthy and prominent sportsman of the era. Was his name "Cantarini"? Possibly, but not likely. The name "Cantarini" could also have been the retail sales agent between the maker and the buyer. Or perhaps Contriner was still concerned about

the previous Austrian airgun laws prohibiting the former Girandoni apprentices from selling to the public and secretly created them under an alias.

I believe the definitive clue that these remarkable air pistols were made by Contriner circa 1815 is found on the pistols themselves. Remember the "J.C." gold-filled poinçon found below the hammer on each lockplate? This was Joseph Contriner's signature stamp which he often used on a number of his highly-embellished air rifle creations. This same script "J.C." poinçon is found on the lockplates of the rifles in which the top barrel flats of these same air rifles are clearly marked

Contriner (or Cantriner) in gold filled splendour. Case closed.

So after all these years, am I happy that I swallowed my pride in forgiving a perceived injustice surrounding the acquisition of this incredibly beautiful pair of high art air pistols? Of course! I am still absolutely thrilled even to this day to be blessed with the privilege of enjoying these exquisite Contriner repeating air pistols dating from 200 years ago.

My continued thanks and gratitude are extended to Tom Gaylord and his dearly departed wife Edith, whose cherished friendship made all of this memorable experience possible.

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REFERENCES:

- Beeman, Robert, "Austrian Large Bore Air Rifles", Beeman.net, 7/17/2007;*
Blackmore, Howard, Gunmakers of London 1350-1850, 1986;
Hannusch, Larry, "A Fine Pair of Austrian Pneumatic Repeaters", Airguns Illustrated, Jan. 2003;
Heer, Eugene, Der Neue Stöckel, 1979;
Hoff, Arne, Airguns and other Pneumatic Arms, 1972;
Wolff, Eldon, Airguns, 1958



Figure 13: A close look at the lockplate shows a gold-filled "J.C." poinçon that strongly indicates this fine pair of repeating pneumatic air pistols are most certainly the work of the famed airgun maker Joseph Contriner of Vienna.

From Russia, with love

A look at Eastern European spring air pistols of the Cold War period, by the author of *The Encyclopedia of Spring Air Pistols*, John Griffiths. This article includes a glimpse of a recoilless Russian competition pistol, seemingly designed as a rival to the German FWB 65. But it was reportedly hard to cock and was quickly superseded by single stroke pneumatic designs.



West v East: Cold War duel

Air gun collecting is a vast field and thanks to the internet we now know more about the various makes and histories of vintage air rifles and pistols than ever before. However, there still remain niche areas where information is sparse and both the researcher and collector face considerable challenges. Spring air pistols made in the European communist bloc countries during the Cold War period (1945-1991) are such a niche field. Relatively few models were made, and the secretive nature of those countries and their virtual isolation from the West for many years has made it very difficult to find manufacturing data about some of these guns. Details about specific models, such as their manufacturers, production dates and numbers made, are in many cases virtually non-existent. Nevertheless the situation is slowly improving as information percolates over the net and it is useful to have a look at our

current state of knowledge of this niche area.

The Iron Curtain countries involved in air pistol manufacture during this period were confined to Russia, Czechoslovakia, East Germany, Poland and Hungary. To the best of our knowledge, Bulgaria, Albania, Romania and Yugoslavia did not produce any air guns. We know that about 20 distinct models were produced in the former countries, although no doubt more will come to light in future, and some may have been made in such small numbers that they probably cannot be regarded as true production models. However, thanks to the opening up of markets over the past 25 years, and

also to the internet, our knowledge of these guns has increased dramatically, and collecting of all but the rarest examples has become a feasible proposition for the keen collector.

Russia

Russian spring air pistols are surprisingly few in number, although this could be partly due to ignorance on our part, as the Soviet Union was the most secretive of the Eastern bloc countries. The principal producer of air guns in Russia is the Izhvesk arms company (better known these days by its airgun manufacturing name Baikal) which was established in 1942 and is well known for its manufacture of the



Fig. 1. Russian Sport Pistol SPP



Fig. 2. Markings on the Russian Sport Pistol SPP

Kalashnikov rifle. What was probably the first Russian-made air pistol to appear in 1945 was the Izhvesky 'Sport Pistol SPP' or 'IL-45', shown in Fig. 1 This was an obvious copy of the German EM-GE Zenit air pistol, and it can be ascribed to Izhvesk from the markings, although these can vary somewhat. The example in Fig. 2 depicts an 'arrow in triangle' which is an early Izhvesk trademark, and the year of manufacture, 1945, is also indicated. Other pistols are known which are date marked 1946. The pistol has been the subject of much discussion in Russian collecting circles and there is still much that is not known about it. Although examples are rarely encountered, even in Russia, it seems that a reasonable number were produced during its short manufacturing period between 1945 and 1947. One estimate has put the number as high as 55,000 but this has been disputed and does seem unlikely in view of the pistol's rarity and the fact that the highest serial number reported to date is 4784. For the collector, the most likely places to find one would be on the German auction websites, presumably because they filtered into East Germany from Russia before German reunification. However, one was recently available in a UK auction

Most likely Izhvesk made the pistols with machinery and tooling taken from the EM-GE factory after the occupation of Germany. The pistol is

to all intents and purposes identical to the plastic grip version of the Zenit that was being produced by EM-GE just before the War, and even the grip itself seems to have come from the same mould, with an identical shape and chequering pattern to the Zenit. The position and size of the circular grip logo circle are also identical with only the pattern within the logo circle being different. This lends weight to the suggestion that the pistols were made on acquired EM-GE machinery. The grip logo bears the name of the Izhvesk company in Russian script. Additional examples of the SPP pistol can be seen on the Vintage Airgun Gallery [1a], and the German website Muzzle.de [1b].

A later and better known air pistol from Izhvesk (by now using the trademark Baikal) is the IZ-40 (also known as the IZH-40 and the IJ-40), a solid conventional break-barrel type which appeared in the late 1980's (Fig. 3). As it was exported to the West up to about 1991, examples are not too difficult to find. It was replaced in about 1991 by the Baikal IZ-53, which in some respects was a backward step, as the IZ-40 was a more solidly built pistol and more pleasing to the

eye. The IZ-53 continued to evolve somewhat, but as this falls outside the Cold War era it will not concern us here.

It is perhaps worth clarifying some of the confusion that surrounds the designation of Baikal airgun model numbers, as the abbreviations IJ, IZ and IZH are often used as well as the Russian Cyrillic script letters ИЖК in Russian speaking countries. The abbreviations actually represent the first two letters of the company name ИЖЕВСК, pronounced as 'Izhvesk', so in phonetic translation these could be represented by the letters IZ or IZh. In some European languages the "zh" sound approximates to the letter J, hence sometimes guns are also described as IJ models.

A little known and enigmatic Russian air pistol that did not originate from the Izhvesk company was a copy of the Webley overlever design, variously referred to as the Baltiets Mod. 77, the PP-M.74 or the FSC Patriot. [2] An example of this pistol is shown in Fig. 4. The manufacturer has been puzzled over on Russian websites, and appears to be a Leningrad company



Fig. 3 Baikal IZ-40

called "Patriot" at least from 1977 onwards. The pistol was designed in 1974 by Victor Khristich, chief designer for the Department of Sporting Guns Central Design for use in air pistol events for the armed forces, and these first guns were marked "PP - M.74". The special features of the pistol were patented in 1975 (Russian Patent 646192). The gun underwent testing and development at the State Testing Station in the Central Research Institute from 1974 to 1977, when it was renamed the Baltiets Mod. 77. The guns were then mass produced, with an intended wholesale price of 60 roubles, which was about equivalent to almost half of the average monthly salary, and of course the retail price would have been even higher. Allowing for exchange rates and inflation, 60 roubles would be roughly equivalent to £350 in today's terms), so obviously



Fig. 4. The Baltiets Mod. 77 air pistol

the pistol was not intended for public use and would only have been affordable to State-run organisations. It is claimed that about 6,000 pistols were produced. The gun came in a plastic carrying case, which included

a user's manual, a screwdriver, and barrel cleaning rod.

There are several design features that differentiate this pistol from the Webley pistols, most notably the introduction of an anti-bear trap safety, the barrel release mechanism, which requires the barrel to be pulled forward before it can be lifted up, and the extensive use of glass reinforced plastic for certain components. Despite its high price, the pistol is flimsy by Webley standards and most examples reported on the internet among Russian collecting circles have needed extensive repair. Pins are used rather than screws wherever possible. The barrel has a brass liner and the breech plug face, which carries the principal markings, is rubber.

It is interesting to make some size

comparisons between this pistol and the 0.177 Webley Senior. With an overall length of 22.5 cm, the Baltiets is slightly larger than the Senior (21.5 cm), and its barrel is longer by 2 cm. Even so, the pistol is significantly



Fig. 5. One of two special presentation Baltiets pistols made for communist party dignitaries.

lighter than the Webley (0.73 kg vs. 0.94 kg), reflecting the more solid construction of the latter. If quoted figures are to be believed the Baltiets delivers a higher muzzle velocity than the Senior, about 410 fps as opposed to 360 fps.

Although about 6,000 pistols may have been produced, few would have been readily available to buy by the general public as they were primarily intended to be used as trainers. Presumably most ended up in State sponsored sporting organisations. It is known that boxed sets, which included tools and a manual, were sometimes presented as gifts to dignitaries at communist party conferences. Two highly ornate examples were produced (Fig. 5), one of which was presented to President Brezhnev in the late '70s.

By the 1970s attention became directed towards developing air pistols for international competition shooting, and in particular a rival to the highly successful German FWB 65 pistol was sought. A highly innovative spring air pistol was developed by G.M. Achkasov at the Central Design and Research Bureau for Sporting and Hunting Weapons, based in Tula. He combined the cylinder-in-butt principle of the Walther LP53 with a unique recoilless floating cylinder concept to produce a pistol that had a longer barrel than the FWB 65 (23 cm compared to 15.5 cm) and yet was

shorter in overall length (33 cm, as oppose to 42 cm). This recoilless pistol was named the MC-51 and an example is shown in Fig.6. [3]

The principle of the floating cylinder action is summarised in Fig. 7:

In contrast to the sledge system of the FWB 65 and the opposing pistons of the Diana Giss system, recoil is reduced by the piston and the cylinder moving in opposite directions. It is not clear from the few known images of this pistol how the spring compression stage is actually achieved, which of course will require considerable leverage, as no cocking lever can be discerned. However, from a published cross sectional diagram (Fig. 8) it is evident that a back-strap lever is concealed in the grip, which drops down and can then be forced upwards to compress the spring.

Apparently the recoilless action worked perfectly and very little recoil could be felt by the shooter. However, in order to achieve an acceptable muzzle velocity it was necessary to use a powerful



Fig. 6. The Russian MC-51 recoilless air pistol

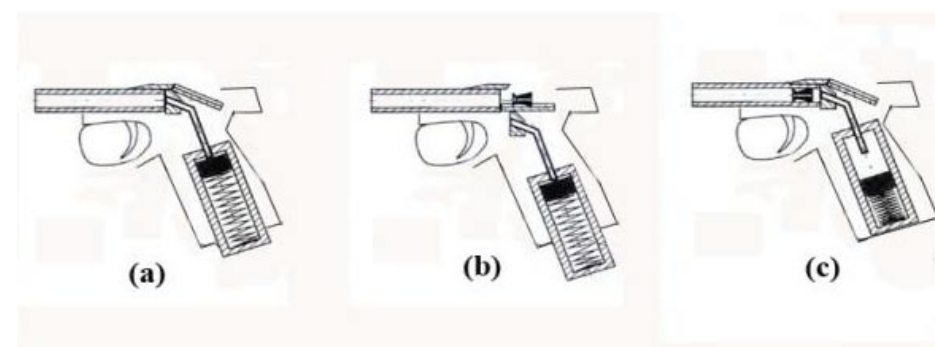


Fig. 7. The principle of the floating cylinder used in the MC-51 pistol. (a) The pistol in the uncocked state. (b) The whole cylinder unit containing the piston and spring is pulled down out of the grip, and at the same time the breech is opened so that a pellet can be inserted. (c) The cylinder is then forced back into the grip while the piston is held back by a sear, resulting in the spring being compressed. The breech is now sealed and the gun is cocked and ready to fire. On discharge the piston and cylinder simultaneously move in opposite directions to compress the air and propel the pellet, and the pistol returns to state (a).

spring and it was reported that target shooters found that the gun placed too much strain on their wrists

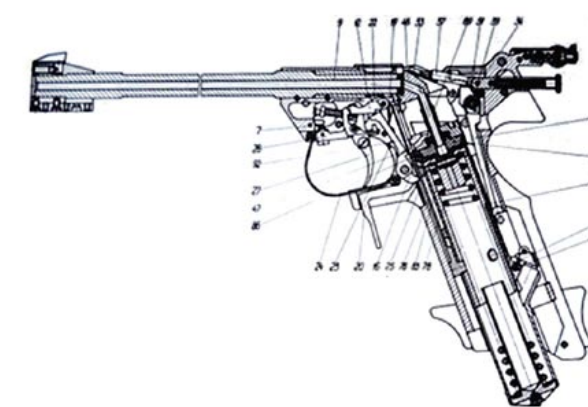


Fig. 8. Cross-sectional diagram for the MC-51 pistol

after prolonged use. It is also obvious from the sectional diagram that realisation of the sliding cylinder principle required considerable constructional complexity. So in view of these factors it is not surprising that the pistol was not produced in any significant numbers as a match pistol and was soon superseded by single stroke pneumatic designs.

Czechoslovakia

After Nazi occupation of the country the major Czech arms companies continued in production, but solely to make weapons for the Wehrmacht and the Waffen SS. After liberation in 1945, regrouping of the various manufacturing

companies took place, but under increasingly strict communist control, culminating in nationalisation and centralisation in the early 1950's. Those companies involved in air gun manufacture before the War had resurrected air gun production by about 1947, but numbers of guns made before nationalisation of these companies by the communist state were very small and

Table 1. Summary of Czech spring air pistols 1945-1990

Name	Type	Approx. dates	Manufacturer
Lov 1	overlever	1950's-60's	Lovena-Druzstvo, Prague
Lov 2	push-barrel	1960's - current	Lovena-Druzstvo, Prague
Noma	overlever	1950's?	Unknown
Stella 551	concentric	1947- mid 1950's	Kovo AS, Prague
Hurikan 47	Underlever repeater	~ 1947	Josef Brunek, Hranice
MMH 47, JBH 54	underlever repeater	1947- ca. 1956	Josef Brunek, Hranice
Slavia ZVP	break barrel	1960-1968	Preone Strojrenstvi, Uhersky Brod
Tex 086, Tex Mod.3	break barrel	1968- late 1990's	Preone Strojrenstvi, Uhersky Brod

guns from this period are now very rare. Of the Warsaw Pact countries, Czechoslovakia proved to be the most prolific producer of air pistols, and between 1945 and 1990 at least 8 different models saw the light of day (Table 1). However, only the Slavia and Tex pistols were exported to the West in significant numbers, and these will be the most familiar to collectors. While these are conventional break-barrel designs, the lesser known earlier pistols tend to show more ingenuity and quirkiness in their design, which makes them particularly desirable to collectors. However their rarity also makes collecting examples difficult to say the least. The various Czech models produced between 1945 and 1990 are illustrated in Fig. 9.

The Lov 1 (Fig. 9a), made by Lověna-Druzstvo of Prague was an attempt to emulate the success of the Webley air pistols, and followed the basic Webley design with a few modifications. The Lověna-Druzstvo company had already been established for 20 years when war broke out, and after the war it continued with gun production, expanding its operations by taking over various other gunsmithing firms. Their decision to venture into airgun manufacture with the Lov 1 seems to have been taken in the early 1950s, after nationalisation. We now know that there were two versions, differing

only in the position and shape of the grip and the trigger/sear arrangement. Fig 9a shows the second version where the grip has been moved to the extreme rear of the frame. The pistol, calibre .177 or .22, is well made of solid steel with a walnut grip, and is longer (10 ins versus 8.5 ins) and heavier (1.14 kg versus about 0.9 kg) than the Webley Senior. The barrel is also 1 inch longer than the Webley. The absence of the second small cocking link found in the Senior makes cocking somewhat more difficult, but the simple thumb operated barrel release is a nice original feature, and is very convenient to use. As the guns were not serial numbered it is difficult to estimate how many were made, but given their rarity, even in the Czech Republic, and the fact that survival rates would have been very high, one can assume that production numbers were quite low. It is doubtful if any were ever exported to the West.

The Lov 2 was the second pistol to be introduced by the company, and was an unremarkable push-barrel pistol, initially similar in construction to the Milbro G2, with a sheet steel body and black plastic grip (Fig. 9b). It is difficult to find reliable information about dates of manufacture, but it was probably introduced around the same time as the plastic grip Milbro G2, i.e. in the mid 1960s. Like the

Lov 1, examples are rarely seen outside the Czech Republic and so it was probably never exported. The pistol underwent a retrograde transformation, probably in the 1970s or early '80s, when the size was reduced and the construction changed to virtually all plastic, including the trigger and air chamber. Only the barrel, spring, piston and sear were made of steel. Two versions of this "all plastic" Lov 1 were produced, the earlier one (Fig.9c) having a moulded thumb rest on the left hand side of the grip, and the later one having flat grip sides. The changeover date between the two versions is uncertain but probably occurred in the post-communist era sometime in the 1990s. The first version is more collectable than the second, although those examples of the second version that were briefly rebranded and sold by Webley as the Webley GnAT in 2000 have a special cachet if accompanied by their Webley box.

Interestingly another Czechoslovakian company attempted to exploit the Webley design, and a pistol known only as the Noma came onto the market, most probably in the early 1950s, pre-nationalisation. An example is illustrated in Fig. 9d. Like the Lov 1 this had a wooden grip and lacked the Webley small cocking link. Whereas the Lov 1 has a Webley-type vertical rising sear, the Noma has a rocking sear. Another difference was the sliding barrel catch, the Noma lacking the thumb operated lever. The Noma was a smaller pistol than the Lov 1, and at 8 inches overall length was even smaller than the Webley Senior. The pistols were serial numbered and from the highest serial number yet seen we know that at least

1589 were made. However, the pistols are extremely rare and at the present time only two examples have been recorded. Nothing is known as yet about the manufacturer of this intriguing pistol.

The Stella 551 air pistol (Fig.9e) is somewhat better known, but still very rare, and is quite unique in its cocking principle. This has been discussed in Airgun Collector 2 [4] so need not be elaborated on here. The pistol is of the concentric type and is well made of aluminium and steel. It was designed by L.V.Kapsa and made from about 1948 to 1953 by the company Ladislav Kotek, Ltd., based in Krnsko. It can be regarded as a low end of the market air pistol, slightly better than the average gat-type, but like those pistols it is cocked by pushing the muzzle against a hard surface. However, the mechanism of action is quite different and the barrel remains stationary when the gun is fired.

The JBH 54 shown in Fig 9g is also mechanically a very interesting air pistol, and when compared against the Stella 551 is something of a giant, weighing in at 1.25 kg, with an overall length of 15 inches. It is a 5-shot

repeater and its unique design was the brainchild of gunmaker Josef Brunek of Hranice. His first version appeared in 1947 in the form of the Hurikan 47 (Fig.9f), only one example of which is currently known. This was followed by the JBH 54 modification (but then called MMH 47), which had a different cocking lever pivot position and a different loading principle. The

MMH47 was made between 1947 and 1949 and was available with a wood or plastic grip. There then seems to have been a gap in manufacture, and the gun was resurrected as the JBH 54 in 1954 and was made up to about 1956.

Its rather complex but nevertheless reliable mechanism works as follows. The piston sits with the main spring



Fig. 9 Czech air pistols 1945-1990 (illustrations are to scale). (a) LOV 1; (b) LOV 2, first version; (c) LOV 2, second version; (d) Noma; (e) Stella 551; (f) Hurikan 47; (g) JBH54; (h) Slavia ZVP; (i) Tex 086

inside a sliding air chamber, and when the cocking lever is drawn back the whole assembly is pushed rearwards and compresses the spring. The piston is then caught by the sear and held back, so that when the cocking lever is returned only the air chamber returns back to its original position. The gun is then ready to fire. On the top of the cylinder is a small recess that holds five 4.4 mm round shot with a delivery hole leading to the barrel breech. The sliding air chamber has a tubular probe at its head that extends well into the barrel so preventing a shot dropping into the breech through this hole. The action of cocking the gun pulls the probe out of the barrel and lets a shot fall into place, and then when the air chamber is returned the probe pushes the shot into the barrel ready for firing. Surprisingly for a pistol firing round shot only, the barrel is well rifled. The power is a bit disappointing, probably because one would expect more from such a hefty gun, but the repeater action works faultlessly and the forward position of the cocking lever makes rapid fire shooting easy and great fun.

Better known Czech air pistols from the communist era were the Slavia ZVP and Slavia Tex models (Figs. 9h and 9i respectively). Both of these break-barrel pistols were made by the company Česká Zbrojovka Uherský Brod (a name which basically translates as 'Czech Armoury in Uherský Brod'). The company had been making air guns since the end of the War, and had been nationalised in 1950. The Slavia name for its air gun products was introduced in 1954, but their first pistol introduced in 1958, was actually marketed simply as the "ZVP", the initials standing for "Zlamovací Vzduchová Pistole", or "Break-barrel air pistol". In 1960 the pistol was renamed the Slavia ZVP,

and production continued from 1960 to about 1968 (although one source puts the latter date at 1972). Fig.9h shows this second version. The only significant differences between the two pistols appear to be in the markings (the former is marked simply "ZVP", the latter "Slavia ZVP") and the sighting arrangements. The pistols are very well made and reliable, but otherwise unremarkable. The ZVP is rarer than the Slavia ZVP. Few people are aware that there are two variants and a premium for the first version is rarely charged by dealers, so it is worth looking out for the earlier model.

The Slavia Tex, with its more modern look, took over from the Slavia ZVP in about 1968 and was commercially more successful, enjoying a wider export market and being made in greater numbers. With a new adjustable trigger, the gun was unique in having a small screwdriver for making such adjustments fitted into the cylinder end plug. At first the pistol was called the Tex 086, but in 1980 after a slight upgrade, principally involving the sights, it was renamed the Tex Model 3. Fig. 9i shows the Tex 086 version. Manufacture of the Tex Model 3 seems to have ceased by the end of the 1990s, but it is difficult to be certain of the date as extensive stocks continued to be sold up into the early 2000s. As manufacture ceased, so a Chinese-made clone took over, the only significant difference in its construction being the introduction of a safety catch, so enabling it to satisfy

new US gun regulations, something that the Tex 3 was unable to do.

Hungary

The principal maker of firearms in Hungary before World War 2 was FEG "The Metalware, Arms and Machine Factory", based in Budapest, and after the War under communist state control it ventured into airgun manufacture, producing a range of air pistols and rifles, many of which were imported into Britain. The main importer and distributor was George Muller, and these FEG airguns are more familiarly known in the UK by his company name Relum. The name Relum was derived from Muller spelt backwards. Throughout its history the FEG company was renamed several times, and after the War between 1946 and 1965 it was called Lámpagyár ("Lamp Factory"). In 1965 the company name reverted to FEG, which persisted until post-communist times, and it is now called the FÉGARMY Arms Factory Ltd.

Only four spring air pistols were produced during the Cold War period and these are summarised in Table 2, and illustrated in Fig. 10.

The Lámpagyár pistol, shown in Fig. 10a, has a unique mechanism, where the cocking lever which lies along the top of the cylinder is lifted up and the spring is compressed on the return stroke of the lever, reminiscent of the action of the Certus pistol. At the



Fig. 10. Hungarian air pistols 1945-1990. (a) Lámpagyár pistol; (b) FEG HLP (Relum HLP or Hurricane; Telly HLP); (c) FEG LLP (Relum LLP or Tempest; Telly LLP); (d) FEG Artex (Relum Artex)

same time as the cocking lever is lifted up, a loading gate on the left hand side of the pistol springs open to allow the pellet to be inserted into the breech. The pistol was made from about 1945 to the early '50s, and serial numbers suggest about 3000 may have been produced. It must have been exported in very small numbers in view of the very few examples that turn up in Western Europe. Although the gun is quite well made, the cocking stroke is not particularly comfortable to use and one can see why it may not have proved popular. The gun was available in .177 calibre only, with a rifled barrel, and weighed just over 1 kg.

Sometime after production of the Lámpagyár pistol had ceased, FEG introduced a new model, which carried on the company tradition of unusual side loading mechanisms. This was the FEG HLP, illustrated in Fig. 10b. The pistol, available in .177 and .22 calibres, was made from the 1950s into the 1960s, and was marketed variously as the Telly HLP, the Relum HLP or the Relum Hurricane. The gun

was cocked by a forward underlever, similar to that used in the Czech JBH54, and the pellet was loaded via a narrow section of the breech which could be rotated outwards manually from the left side of the gun. As noted above, the pistol was imported into the UK by Relum, but even so examples do not turn up in the UK very often today. It is doubtful that any were imported into the USA. The cocking and loading mechanism will be much more familiar to collectors in the form of the Center and Falcon pistols made by El Gamo between 1973 and 1994 - these updated copies being made in much larger numbers than the Relum and enjoying greater commercial success.

Around the same time as the HLP, a break-barrel equivalent was also introduced by FEG, called the LLP (Fig. 10c). This was very similar in size and appearance to the HLP and even used the same shaped wooden stock. This pistol was not produced in anywhere as great a number as its underlever cousin, and although it is a break-

barrel with no distinctive features it is very collectable because of its rarity. As the pistol carries no model name and no markings to indicate the manufacturer, until very recently this pistol was an unknown entity to collectors. Fortunately collector Vic Turner found a boxed example of the pistol, and thanks to the information on the box, the pistol could be identified as a Relum LLP, and most interestingly it also had the model name "Tempest". This was in accord with the "Hurricane" name that Relum had given to its cousin pistol, the HLP. Prior to this discovery the only illustration for the FEG LLP had been in the catalogue for the auction of the noted Myron Kasok airgun collection, but the gun was not identified at the time [5]. It was thanks to Vic's vigilance that he realised the two pistols were the same. The boxed example that Vic found was accompanied by a wooden cocking aid, an essential accessory in view of the sharp front sight blade. The grip of the pistol was drilled to accept a wire rifle stock but no example of such a stock has yet

Table 2. Hungarian air pistols 1945-1990

Name	Other names	Type	Approx. dates	Manufacturer
Lámpagyár		overlever	1945-early 1950s	Lámpagyár, Budapest
FEG HLP	Relum HLP or Hurricane, Telly HLP	underlever	1957-63	FEG, Budapest
FEG LLP	Relum LLP or Tempest, Telly LLP	break-barrel	Late 1950s - '60s	FEG, Budapest
FEG Artex	Relum Artex	break-barrel	1970s	FEG, Budapest

been reported. An excellent review of this boxed pistol by John Milewski has recently appeared. [6]

FEG's final spring air pistol venture was the Artex (Fig. 10d) which appeared briefly in the 1970's. This was another conventional, if inelegant, break-barrel pistol, and although solidly made with well blued steel components, it was let down by a bulky and rather crude plastic stock. The pistol barrel was rifled and only available in 0.177 calibre. The front sight was hooded, and the rear sight, which was adjustable for both height and windage, was unique in that vertical adjustment was achieved by a screw acting on the cylinder end plug. From serial numbers seen to date we can say that least 9000 pistols were made. As so few examples turn up today, it seems that it was not a commercial success, and it is doubtful that total production exceeded much more than this number.

Poland

Poland produced only one spring air pistol during its communist state-controlled period, namely the Predom Lucznik KL170 cylinder-in-butt pistol (Fig. 11), which was an unashamed copy of the Walther LP53. The pistol was made by Zaklady Metalowe Predom Lucznik (which translates as the 'Predom-Lucznik Metal Works') in the town of Radom. The general features of the pistol are too well known to go into detail here, and the only major differences between it and the LP53 are the barrel, which is bored from solid steel rather than being constructed of a steel liner in an alloy sleeve, and the rear sight construction. A more detailed comparison of the

two has been made by collector Leonard Joe. [7]

The build quality is not up the standards of the Walther, but the gun represented excellent value for money, as its retail price was significantly lower than that of the LP53. The date of introduction is uncertain, but was in the 1970's around the



Fig. 11. The Predom Lucznik KL170 air pistol

time that Walther discontinued production of the LP53. The two guns were definitely on the market at the same time for a period, as the LP53 continued to be sold for a few years after its discontinuation as there were significant stocks to be run down. The date of discontinuation of the Predom is uncertain, but would have been in the late 1980's (the company filed for bankruptcy in 1990). Anecdotal information suggests that the pistol was not only made for export but also many were supplied to the Polish army as trainers. Significant numbers of these guns, both new and used, have appeared on the market in recent years, many showing signs of having been in storage for some time, which adds credence to this suggestion.

East Germany

East German air pistols make a pretty barren field for the collector, as very

few models were produced, and of those there is only one with any realistic prospect of being found. The lack of manufacturing activity was largely due to the country's post-War economic priorities being focussed elsewhere, but was also due to the banning of private ownership of any sort of firearm for many years.

After the Russian occupation of East Germany, arms manufacturing companies were closed down and a major reorganisation of the industry was initiated. Only two state-run companies emerged that became involved in airgun manufacture, namely VEB MEWA Ernst-Thälmann-Werk (otherwise known as ETW) based in Suhl, and Reinhold Manteuffel & Co. in Zella-Mehlis. The former took over production of various

former Haenel airguns and the latter of former Venus Waffenwerk airguns. Air rifles were the main consideration and air pistols were hardly catered for. In the early years after the War air pistol production was confined to the ETW version of the Haenel 28 and Manteuffel's version of the Tell 3. These guns were presumably made using machinery and tooling salvaged from the original companies. Although the Haenel name was retained by ETW, it was not always used on their airgun products, and their resurrection of the Haenel 28 was referred to simply as the Model LP 28. Very few of these post-War LP28's were made and it is not known what sort of market the guns were intended for or even if any examples have survived. In his excellent history on post-War air gun manufacture in Suhl and Zella Mehliis, Ernst Dieter refers to Model LP28 production as consisting of a "mini-series". [8] If an example of one

of these pistols were to turn up, it would probably only be differentiated from a pre-War model Haenel 28 by its markings, and the lack of the "Haenel" medallions in the grip plates.

Reinhold Manteuffel's version of the Tell 3, designated the Model 75, appeared in 1953 and was also made only in very small numbers. No examples have yet come to light and the only image we have is an artistic representation from a Manteuffel catalogue of 1953 (Fig. 12). The pistol appears to be identical in appearance to the Tell 3, except for the obvious absence of the Tell 3 medallion from the grip. An example would be a major find for the collector, as its unusual manufacturing background would add further interest to the already high collecting value and rarity of the Tell 3.

It became apparent to the East German powers-that-be that reproducing relatively complicated pre-War air pistol designs was never going to be a commercial proposition, and the introduction of a more cost-effective new model was required. Although private ownership of firearms, including air guns, was strictly forbidden in East Germany up to about 1964, it was still possible after the War for young people to shoot airguns under the auspices of the F.D.J (Freie Deutsche Jugend or Free German Youth) organisation, which was the official communist state-sponsored youth movement.



Fig. 12. The Manteuffel Model 75

In 1952 another state-sponsored organisation was founded, the G.S.T. (Gesellschaft für Sport und Technik), which provided similar sporting outlets but also had a strong military involvement with national service. The new GST organisation obtained supplies of air rifles from manufacturers, but they also wanted a new economical and reliable air pistol that would give good service as a basic trainer, and it was Ernst-Thälmann-Werk (ETW) that was commissioned to develop one. Work on the Sport Modell LUP 54, as it became known, began in 1952, and by the end of 1956 it is recorded that 2443 pistols had been produced for the GST. The pistols, like all the other guns were kept by the GST under strict control and could be used only by its members. As part of this control, guns were stamped with the letters



Fig. 13. The ETW Sport Modell LUP 54 (Haenel LP54)

"GST", a practice that continued up to about 1962. There was even a "Zentrale GST Workshop" in Suhl where GST air guns were repaired and overhauled. When the decision was taken to phase out the LUP 54 in the mid 1960's all the pistols were destroyed, even new ones, as there was no other commercial outlet for them. The authorities certainly did not want to risk their becoming available to the general public, for whom any sort of firearms ownership was illegal. However several pistols went "missing" and since reunification of Germany these illegal survivors have been resurfacing slowly on the international collecting scene. An example of the LUP 54 is shown in Fig. 13.

The pistol itself is a basic break barrel type, and although solidly made it does show obvious signs of being made to a strict budget. The rear sight for example is of the same design as that on the Haenel 28, but whereas the latter has a dovetail fitting to the top of the cylinder, in the LUP 54 the sight is attached by spot welding. The trigger guard is made of pressed sheet steel and the stock is a lighter wood than walnut, possibly beech. The barrel is not rifled.

Typically the markings include "Sport-Modell-LUP-54" on the top of the cylinder together with the letter S inside a triangle followed by the numbers 32/1108/1007. The latter is presumably some sort of product identification



Fig. 14 The ETW (Haenel) Sport Modell 55R (acknowledgements to E. Groba)

code, and as it does not vary it cannot include a serial number. What is presumed to be a true serial number is sometimes discernible on the right side of the grip, in the form of the letter C followed by a five digit number (e.g. numbers C00145 and C02459 have been reported). Probably many of the illegal guns had their serial numbers sanded off to obscure their origin. On the left side of the cylinder just above the grip is the maker's name in small letters: "Ernst-Thälmann-Werk Suhl". The left side of the barrel is stamped "Cal. 4.5 mm", and the GST initials inside an oval are stamped on the right hand side of the barrel housing. Although these pistols are very rare, they do crop up from time on German gun websites. With a fair degree of vigilance the keen collector should be able to find one, albeit at a relatively high price.

ETW also undertook development of a repeating air pistol, the ETW or Haenel Sport Model 55R, which was the

brainchild of E. Lehe, head of research at ETW. Although this interesting pistol seems never to have gone into serious production, a very small number of examples are known, showing that there existed at least three variations. The example shown in Fig. 14 has a tube magazine feed which

clamped under the barrel housing, capable of holding 6, 8 or 12 round shot (4.4 mm). A modified version used a rotating drum magazine holding 25 shot. The neat looking pistol (overall length only 26.5 cm) has many original features, and is cocked by a top lever pivoted at the rear of the cylinder. This arrangement apparently makes cocking with the left hand a simple operation and suits rapid repeater shooting. Power is not very high, as might be expected for such a short design, and a muzzle velocity of around 200 fps has been reported. This is about the same as that produced by the diminutive Tell 2 pistol. Curiously, for what is in effect a low power BB shooter, the barrel is rifled. The barrel and cylinder are made of steel and the grip frame is constructed of die-cast alloy, with chequered walnut grip plates.

Restrictions on airguns became more relaxed in 1964-65 when new gun laws were introduced, and under these

laws private individuals could then buy air rifles provided they had an identity card. However, air pistols were still not available to the general public, and so even in the period from 1965 to the end of the Cold War period there was no further production of spring air pistols in the GDR.

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REFERENCES.

1. (a) <http://www.network54.com/Forum/681456/>; (b) <http://www.muzzle.de>
2. <http://www.airgunlib.ru/index.php?topic=111.0>
3. http://www.shooting-ua.com/arm-books/arm_book_36.htm
4. John Griffiths: 'Wraparound Powerplant', *Airgun Collector* 2, pp 14-21
5. *Encyclopedia of Spring Air Pistols*, J. Griffiths. (2008), p. 304
6. John Milewski: 'A Return Tempest?', *Airgun World*, March 2016, pp.34-35.
7. <http://www.network54.com/Forum/681456/message/1403908495/Walther+LP53+vs+Predom+Lucznik+it+he+%26quot%3Binside%26quot%3B+det+ails>
8. *Luftgewehr und Luftpistolen nach 1945 aus Suhl und Zella-Mehlis*, E.G. Dieter (2002)

Sale of the century

On 16 September and 2 December 2015 the vintage airgun collection of David Swan, who died in 2014, was auctioned by Newcastle-on-Tyne auctioneers Anderson & Garland. David was born in 1940 and spent his career working as a marine engineer at Swan Hunter, the Tyneside shipyard co-founded by his great grandfather, Charles Sheriton Swan. This incredible collection attracted buyers from around the world, but despite the sale being well trailed, many of the guns sold for low prices. Here is a selection from the sale (with thanks to Rod Meek of Anderson & Garland for permission to reproduce the photos – you can see more pics of each of these guns at the Vintage Airgun Gallery).



Auction selection: a rare opportunity for collectors (photo copyright Newcastle Chronicle)



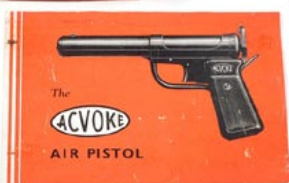
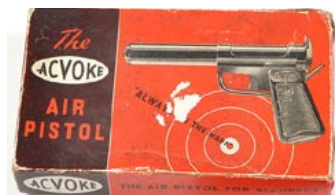
David Swan (photo copyright Anderson & Garland)



Fred Wyrley-Birch, Anderson & Garland (photo copyright Newcastle Chronicle)



Giffard in-line pump pneumatic rifle



Acvoke



Walther LP53



Britannia 'Improved' model



American Luger 'Carbo Jet'



Britannia pop-out pistol



Boxed Anson firefly



Girandoni-type repeater



Brown pneumatic pistol



A F Wirsing & Co gallery pistol



Diana 58 2nd pattern



Oskar Will patent pistol



Girandoni-type butt reservoir pistol



Eisenwerke Gaggau no. 1



Accles & Shelvoke Warrior



Frank Clarke Ltd Titan 7th model



E Bate ball reservoir



Tell 'Tellow'



Johnson & Bye Champion



Straight air cane with brass ferrule

Gung Ho Stuff!

Veteran airgun author and collector, Trevor Adams, creator of the extraordinary Cinedux.com website – a goldmine of vintage airgun photographs, scans of old airgun advertisements, catalogues and articles – reviews the hyperbole used to sell airguns in those heady days before political correctness and trade descriptions laws stopped manufacturers making extravagant claims.

My new Merriam-Webster pocket thesaurus tells me 'gung ho' means 'excessively enthusiastic' and that is what I reckon many air gun advertisements of yesteryear were!

Without a hint of political correct-

ness, many of the principle manufacturers of air guns waxed lyrical about their products in the printed press. They were proud of their wares and they let the world know it. Nowadays, save for specialist publications, airguns mostly attract

bad press, which is sad. Any bonding between a chap and a gun is frowned on, to say the least. Which is why adverts in old copies of magazines such as Meccano, Boy's Own, Popular Mechanics etc, can be a joy to the likes of myself.

It is my observation that "the urge to be armed" burned deep in the psyche of boys – generally up until 30 years ago or so. Unencumbered by societal cautionary tales, most self-respecting, healthy young blokes rather fancied the idea of handling a gun with dexterity, like their heroes on the big and small screens. Then, political correctness came along, at first to be ignored but eventually, it seems, to be obeyed. With a

change in attitudes towards airguns and the like came the withdrawal of mouth-watering advertising and, in fact, even the ultimate demise of many great airgun houses. Trade names have been resurrected latterly but the original great gunmakers are gone.

Back to the kid of the early to mid 20th century... The fellow who took aboard the advice of his elders regarding responsibility, safety and sportsmanship and never let on the compelling reason for really wanting

without one' theme!

Some clever advertising advised not only on the virtues of a rifle or pistol but also how to get adults to buy one for you. Papers and periodicals mostly aimed at the 'young man market' carried pictures of happy heroes and famous sportsmen brandishing the

product for sale. Responsible advertisers frequently showed father and son relationships blossoming around a slug gun.

Other advertisers simply promoted the airgun as a healthy outdoor sporting accessory. It is safe to say that by dint of advertising, the air gun was inserted into the

very positive. With such a prevailing attitude came a bit of exaggeration and partiality... No lesser personages

than Theodore Roosevelt and Lord Roberts supported the idea that a boy's hand was made to hold an airgun. In the early 1900s it must have seemed odd if a boy didn't pine for an

If You're a Real Boy You're a Gun Lover

It's a good, healthy sign for you to want a KING AIR RIFLE for target practice. A KING will give you some of the most important training for sturdy manhood that you can get. It will teach you self-reliance, self-control and make you careful. It will give you a keen eye and steady nerve. It will make you quick and observing. There is no other way you can get such good training coupled with so much real fun.

The KING is so well made and handsomely finished that you will always take pride in caring for it and using it. It shoots straight and carries a long distance—but as it shoots with compressed air and uses air rifle shot it has none of the danger and destructiveness of powder rifles.

The KING 1000 SHOT (No. 5) is the "Winchester" of air guns. It is a hammerless, magazine repeater with lever action, holding 1000 shots to be fired, by automatic loading, one at a time. Price, \$2.00

The KING JUNIOR, a single shot, for the smaller boys.....50c

The KING POP GUN, for the little fellows.....25c

Other KING models.....75c to \$1.75

Send today for the KING CATALOG, illustrating KINGS for all boys from four to sixteen—and for the "grown-ups," too.

KING AIR RIFLES are sold by leading sporting goods, hardware and toy dealers. If you can't find them in your town, send the money to us and we'll ship the KING, express prepaid.

The Markham Air Rifle Co.
The Original and Largest Air Gun Factory in the World
Plymouth, Mich., U. S. A.

TOMMY GETS A TARGETEER FOR CHRISTMAS!

"NOW IT'S MY TURN GEORGE!" "ONLY ONE SHOT GEORGE!" "CAN WE BORROW IT FOR OUR PARTY TONIGHT NEIGHBOR?" "MORE FUN THAN A PICNIC!" "MAKE THE 'BIRDIE' SPIN!" "MERRY CHRISTMAS EVERYBODY!" "HOPE THEY REMEMBER TO FEED ME!"

DAISY'S SAFE FAMILY FUN GUN!

Daisy Targeteer Target Pistol Outfit offers harmless, exciting shooting fun for all the family! Complete Outfit includes: TARGETEER—famous, low velocity, blued steel air pistol—big, boldwood and very accurate at short ranges; 200 rounds special .118 calibre ammunition (they call it '2 metal spinning "birdie" targets; target cards; backstop.

Only \$2.95

Buy Targeteer AT SPORTING GOODS and TOY DEPARTMENTS

WANT A DAISY FOR CHRISTMAS? TRY THIS!

Send for Daisy Handbook No. 2 with latest Daisy Air Rifle, Targeteer Catalogue.

In 1948 Daisy showed a pistol was needed for a good party

an air gun, the one that simply made him feel happy and complete! Nothing odd about this, it is the same feeling experienced with the acquisition of one's first bike or car. Manufacturers pondered this youthful need before drafting advertisements – and what stunning results they came up with. An examination of multiple old magazine and newspaper airgun adverts leads one to the conclusion that one theme underpinned all copy. It was the 'best thing since sliced bread, how are you going to get along

metamorphosis of 'boy to man' as a right of passage. Girls and mothers were verboten. As the natural enemies of air guns they had no place in the scheme of things.

Whatever is now said, the spin on airguns for a long time was definitely

GIVE THREE TIMES MORE SHOOTIN' FUN... with a Crosman .22

1. Shoot RIGHT MORE TRAINING AND PRACTICE SHOOTING... practically anywhere, anytime, at low cost! Best training

Post-war Crosman advert. Some mothers just never get this shooting thing

UNDOUBTEDLY THE MOST APPROPRIATE 'XMAS PRESENT FOR 1914.

B.S.A.

The DAISY Air Rifle

Your beloved President is a man who not only thinks acutely, but acts promptly. He believes thoroughly in rifle practice as an educational training for the young. In a recent book he says: "When able to practice in a rifle range, one can feel that the enjoyment is warranted by considerations of national ethics. We have been able to fix a rifle range at Sagamore. The children take to shooting naturally."

Any healthy boy or girl will get present enjoyment and a splendid training for the future with a DAISY AIR RIFLE. It teaches accuracy, concentration and develops a cool nerve and a steady eye. Give your boy a "DAISY" and teach him to use it.

The "DAISY" is a real gun modelled after the latest hammerless rifle and shoots more truly, using compressed air instead of powder. No smoke, no noise, and perfectly safe in the hands of any boy.

1,000-Shot Daisy, an automatic magazine rifle, \$2.00

Other Daisy models.....\$1.00 to \$1.75

Sold by Hardware and Sporting Goods dealers everywhere, or direct from factory anywhere in the United States on receipt of price. The "Daisy" book telling all about them free, write for it.

DAISY MFG. CO., 289 UNION ST., PLYMOUTH, MICH.

When you write, please mention the Cosmopolitan

The DAISY Air Rifle

Lord Roberts, the celebrated "Bobs" Commander-in-Chief of the Army of Great Britain, has expressed high admiration of American marksmanship and urges his fellow countrymen to follow American methods by teaching their boys when young to practice target shooting. He said: "Rifle shooting is a sport—a game attractive in itself—a national pastime and a patriotic duty."

If you want to give your boy an all-round training, not merely a one-sided education, give him a DAISY AIR RIFLE, and teach him to use it. The "Daisy" is a real gun modelled after the latest hammerless rifle, and shoots accurately, using compressed air instead of powder. No smoke, no noise and perfectly safe in the hands of any boy.

1,000-Shot Daisy, an automatic magazine rifle, \$2.00

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Sold by Hardware and Sporting Goods dealers everywhere, or delivered from factory anywhere in the United States on receipt of price. The "Daisy" book telling all about them free, write for it.

DAISY MFG. CO., 289 UNION STREET, PLYMOUTH, MICH.

Lord Roberts and Teddy Roosevelt backed Daisy



1920s advert for the Bullseye Pistol

airgun of some sort.

Competition between airgun makers was apparent in their paper advertisements. Extravagant claims began popping up. 'Protect yourself, learn to shoot with a Bullseye Pistol',

said one advert. The Bullseye was a rubber band-powered shot pistol made for indoor use. Not sure what mums thought of this idea.

Many gun and pellet makers had no problem suggesting domestic

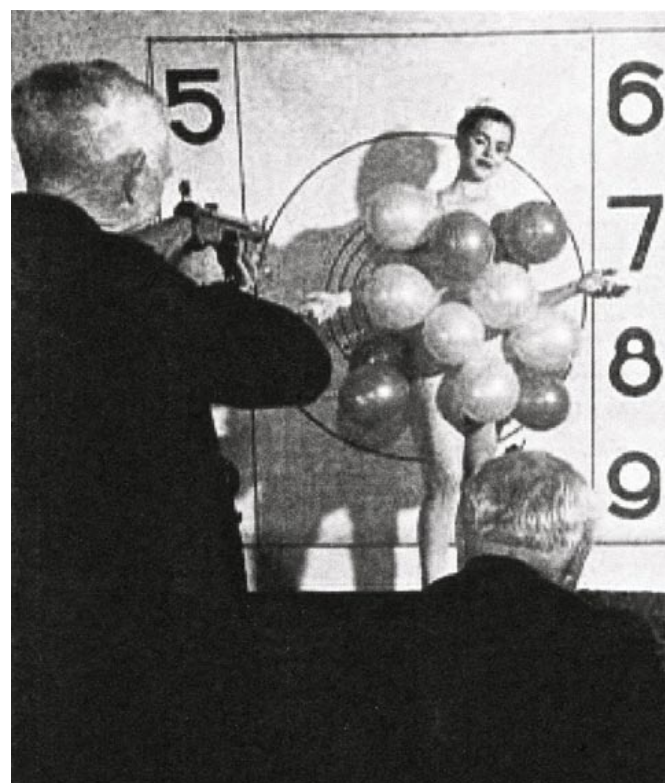
pets might be prospective targets – it truly was a different age. At the time of the Great War, the giant US firm, Daisy, came out with a BB rifle complete with bayonet. Very patriotic. Nowadays it would be considered a dangerous weapon but in its time the 'Defender' would have brought pride and peace of mind to many a kid.

Daisy were actually pretty good at pointing out the relative harmlessness of their products—which probably allowed adverts like the one where a crusty old gent is blasting a fly off another guest's soup, to pass under the radar. In Great Britain the likes of Webley and BSA mostly promoted safety and their advertisements showed fine rifles and hapless bunnies.

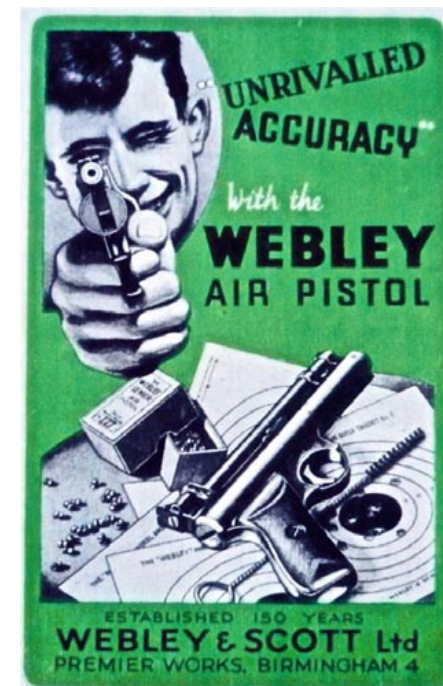
BSA, like Daisy, more than suggested a lad was incomplete without an air rifle, so 'Dad, get him one for Xmas!' Old Webley flyers used to have a chap aiming a pistol straight at the reader. The alteration of this classic picture



HARMLESS GUN
Melvin M. Johnson Jr. of Johnson Automatics Inc. has been inventing weapons since he was 11. Just before the war one of them made headlines when it almost hit out the candle to honor the standard rifle of the U.S. soldier. Recently Johnson's Johnson personally checked another and some-
times, is not a gun at all but a toy target weapon. It is powered by a rubber band, shoots a steel pellet with great accuracy but only for 20 feet or so. It scored a great hit at the dinner party. Between courses the guests amused themselves by putting away at paper targets placed around the room. It



Guests have a post-prandial shoot at a hapless ballooned model with their Johnson Indoor BB target guns (LIFE 1947)



Webley flyers aimed at readers

to a side view of a pistol showed we were on the rocky road to political correctness. The same firm's claim for their Mark II Service rifle regarding accuracy and effectiveness at 80 yards seemed just a bit optimistic. Made it a

15. Mai 1935.

Sehr geehrte Firma!

Wir erlauben uns, Ihnen die Mitteilung zu machen, daß es sich als notwendig erwiesen hat, den Preis für das

Diana-Luftgewehr No. 30

Sportmodell

zu erhöhen, da der seitherige Preis mit den tatsächlichen Herstellungskosten nicht im Einklang stand. Die Verkaufspreise wurden unter Berücksichtigung einer angemessenen Verdienst-Spanne ebenfalls erhöht. Die ab heute gültigen Preise sind daher folgende:

Händler-Einkaufspreis	RM 25.—
Sonderpreis für Formationen bzw. deren Angehörige ..	„ 32.—
Ladenverkaufspreis	„ 35.—

Wir bitten höflichst, von diesen Preisen Kenntnis nehmen zu wollen und sehen der Überschreibung Ihrer weiteren Aufträge gerne entgegen.

Mit Deutschem Gruß
Heil Hitler!

When this aim turns to this

Webley
will be waiting

to supply sportsmen the world over with their celebrated WEBLEY AIR RIFLES AND PISTOLS

Webley & Scott Ltd.
Birmingham
England
(Est. 150 years ago)

Webley and Diana made clear their sympathies in WW2

highly desirable weapon though!

During hostilities in the 1940s Webley published an advert which showed

CROSMAN'S TOJO TARGETS

Prices
50 for \$1.00
100 for \$1.50

Printed by
CROSMAN ARMS CO., Inc.
392 ST. PAUL STREET
ROCHESTER, N. Y.
"Power Without Powder"

During WW2 Crosman advertised its hostility towards the enemy

THE A. C. GILBERT COMPANY
NEW HAVEN, CONN., U. S. A.
PRINTED IN U. S. A.

The Crosman Rogues' Gallery



JOHN SPARROW (Also "Nabisco Sparrow" also "English Sparrow"). He intrinsically ravages song birds and destroys fruit, grain, flowers and vegetables... He is noisy and vinegary and defiles buildings and ornamental trees and shrubs.



ABAM RAT (Also "Rink Rat" also "Dirty Rat"). He is a loathsome creature and is mankind's greatest enemy in the animal world. He is a carrier of disease and should be destroyed for economic and sanitary reasons.



SILVANEUS SNAKE (Also "Rattle Snake" also "Copperhead Snake"). He and his poisonous relatives are a menace to humans and livestock. Protect yourself and others by killing these venomous reptiles.

LISTED below are the pests generally considered fair game in the Crosman contest. All of the so-called pests in the United States are not included, as in certain localities they are protected by law. In fact, it is illegal to shoot even a few of the following pests in some places at certain times of year. Therefore, every contestant should familiarize himself with the Federal, his State and his Local laws in respect to killing any of the pests in the Crosman Rogues' Gallery. Opposite the name of each rogue is the number of points he counts in contest.

- Alligators (35)
- Badgers (30)
- Blackbirds (5)
- Black Snakes (20)
- Bobcats (50)
- Butcher Birds (10)
- California Jays (3)
- Chicken Snakes (20)
- Chipmunks (5)
- Cooper's Hawks (10)
- Copperhead Snakes (20)
- Cottontail Rabbits (15)
- Cowbirds (5)
- Coyotes (50)
- Crows (5)
- English Sparrows (1)
- Field Mice (2)
- Gophers (15)
- Goshawks (10)
- Gray Fox (50)
- Great Gray Owls (15)
- Great Horned Owls (15)
- Ground Hogs (10)
- Ground Squirrels (5)
- Harlequin Snakes (20)

- House Mice (2)
- Hunting House Cats (20)
- Jack Rabbits (15)
- Kingfishers (10)
- Lizards (20)

- Lynx (50)
- Magpies (5)
- Martens (25)
- Meadow Mice (2)
- Mink (30)

- Moles (3)
- Muskrats (5)
- Opossums (35)
- Pine Mice (2)
- Polecats (35)
- Porcupines (40)
- Prairie Dogs (25)
- Raccoons (40)
- Rats (3)
- Rattle Snakes (20)
- Ravens (5)
- Red Fox (50)
- Red Squirrels (10)
- Rice Birds (3)
- Sharp-Shinned Hawks (10)
- Skunks (35)
- Sonoran Coral Snakes (20)
- Starlings (2)
- Stellar's Jays (3)
- Turtles (10)
- Water Moccasin Snakes (20)
- Weasels (10)
- Woodchucks (10)
- Wolverines (60)
- Wolves (60)



JOSEPH RABBIT (Also "Jack Rabbit" also "Cottontail Rabbit"). He is an insatiable creature that does considerable damage to garden crops, grain crops and trees. Shoot Mr. Rabbit on sight whenever and wherever he is not protected by law.



ERA CROW (Also "Pirate Crow" also "Caw Crow"). He is a robber well known in every farming community for his desecration upon growing crops. National also on his habit on quality and his attacks on crops other than corn.



REBUS SQUIRREL (Also "Red Squirrel" also "Ground Squirrel"). He is a scoundrel who spends a good deal of his time eating the bottom of tree stumps, destroying the eggs and killing the young. He is a trouble maker and a piller.

Crosman Owners Combine "Good Sport With Good Riddance"

"... With my Crosman I shot a rattler about six feet long, as big around as a saucer, and weighing twenty-five pounds. That bit of shooting was the best thing a Crosman will ever do as rattlers are one of our worst enemies down here."
"HIP" COLLINS, Cotulla, Texas.

"... I use my Crosman for all small game from Jack Rabbits down, and secure a larger percentage of kills than I do with one of my heavier guns."
A. F. HOWARD, Glendale, Calif.

"... Hardly a day passes that we do not have occasion to use our Crosman Silent .22 in the extermination of pests around our buildings. We have little or no trouble in their destruction and besides get considerable sport out of it."
J. L. BARNNEY, Michigan, N. D.

"... and enclose a photo of the coyote I shot with my Crosman Silent .22. The shot that dropped it went through the middle of its forehead."
DONALD CLARK, Portland, Oregon.

"... I have all kinds of guns but your Crosman Silent .22 I find to be the best for all outdoor sporting, for small game, and for spending leisure hours at a small cost."
B. WHITTS, Prestonsburg, Ky.

"... I believe that the Crosman Silent .22 is the only rifle for target and small game such as rabbits and squirrels. No truer gun is made."
C. E. MOORE, Gibland, La.

"... Have killed many rabbits and squirrels with the rifle, some at far range."
WILBERT JOHNSON, Chassell, Mich.

Crosman's Rogues' Gallery ad underlines how things have changed (Thanks to DT Fletcher for these scans)

understandable partiality. It illustrated a helmeted German soldier in the cross-hairs of a scope. Back in the Fatherland, Diana air rifles were being advertised with an equally

partial 'Heil Hitler'. And across the pond (as they say) Crosman issued Tojo Targets – maybe raising a few Japanese hackles. But not as many as a toy dexterity gadget from A C Gilbert

Co., encouraging Yank kids to bomb Tokyo!

Before World War II Crosman came up with what must have been thought a sure seller idea: a competition where points were awarded to a shooter for each animal killed with a Crosman rifle. The unfortunate beasts were listed and allotted a points value. A sort of 'scale of difficulty'; alligators, owls, badgers, snakes and turtles etc were amongst those with a points value on their head! A young rifleman posted his monthly score-sheet back to Crosman. If the same young chap failed to read the small print pertaining to the illegality of shooting some animals in some States, he could be in strife. On the face of it, this competition seemed almost a licence to commit mayhem and murder. In today's climate such a competition would be considered outrageous and curtains for the firm that proposed it.

\$500.00 REWARD

Nearly 100 Cash Prizes

THE purpose of this contest, sponsored by the Crosman Arms Company, is to combine "good sport with good riddance." The campaign is in keeping with the nation-wide movement to exterminate predatory animals, rodents, injurious birds and harmful reptiles that prey upon domestic stock and wild game, consume crops and stocks of food-stuff, spread disease and are a menace to health and property.

The Crosman Arms Company in its desire to co-operate with other agencies in waging intensive warfare against such pests offers \$500.00 in rewards to those who participate in the contest which lasts for nine months. The \$500.00 will be divided into grand rewards totaling \$320.00 and monthly rewards totaling \$180.00, and will be distributed as follows:

The competition's aim?: To combine 'good sport with good riddance'

In the innocent days of the 1930s, it was a great idea!

In the 1950s a number of airguns became associated with the Western fantasy that occupied many young minds. So adverts depicted the latest airguns being drawn from holsters at speed; once again appealing to young men's almost instinctive urge to own a gun. (Here I risk this argument being taken to its logical conclusion where a Stone Age lad is only happy with the world when he has a nice smooth pebble in his hand, ready to throw...)

Such advertising was mostly seen in American publications where airgun makers specialised in replicating famous firearms. There, airguns were not meant to compete with firearms, rather they were an entrée to the gun world. In the UK and Europe, airgun shooting was a discipline in itself and as most airgun shooters were urban dwellers, the progress they made was not airgun to firearm but airgun to a more refined one. Not a subtle difference. This trend led to airgun manufacturers dropping

CROSMAN SINGLE ACTION 6 REVOLVER

.22 caliber, CO₂ gas-powered Pelgun.

Safer FAST DRAW Shooting and FUN PLINKING... Shoot in MORE PLACES... at LOWEST COST

AUTHENTIC FRONTIER STYLING. Patterned after the famous frontier revolver that won the West. Same weight (2 lbs.), feel, balance, pointability. Blue-black finish; staghorn plastic grip. Uses HB45 holster.

TRUE FAST DRAW ACTION. Knurled long-spur hammer; smooth trigger pull; just cock or fan hammer to shoot. Easy loading; revolving cylinder holds 6 Super Pells. Perfect for safe dry firing, too!

HIGH ACCURACY. Button rifled Tru-Flyte barrel; factory tested to keep shot groups tight on regulation 25 ft. range.

Model 6

Crosman capitalised on children's desire to enact the Western fantasy

extravagant 'range of effect' claims and greater emphasis was placed upon accuracy and consistency, along with safety and responsibility.

A new style of advertising was born and airgun advertisements are now only found in specialist publications. Diplomatically and sadly, they no

longer illustrate the bond twixt young men and air guns. But when my nine year-old great-nephew looks at my collection and says: 'I looove guns!', I know the gene has passed on; the ember still glows.

©Trevor Adams



Crosman enlisted the help of the 'fastest gun alive' - Dee Woolem (thanks to DT Fletcher)

Affordable classic

Airgun World airgun writer John Milewski traces the evolution of the Diana MkIV/Milbro G4, a British-made pistol derived from EM-GE's prewar Zenit, from its introduction in the 1950s to the final examples in the early 1980s. This painstakingly researched article is a must for anyone hoping to collect these affordable (for now, anyway) classics.

The Superbly balanced Diana Mark IV AIR PISTOL



Here is the new handy-sized air pistol that is a real winner. Built for accurate shooting. It is ideal for sports and target work. The long cocking lever makes loading an easy job. Calibre 177.

Price
Rifled bore £4-7-6.
Smooth bore £4-6-9.

Length 11 in.
from your local dealer.
Use Milbro Caledonian Pellets for Best Results.

MILLARD BROTHERS LTD
467 CALEDONIAN ROAD, N.7. Telephone: NORth 2437.

Simple cocking and loading.

May 1957. First appearance in *Meccano Magazine* (Thanks to John Atkins for this scan)

When London based Millard Brothers Limited, trading as Milbro acquired the prewar manufacturing plant from Mayer & Grammelpacher, they reintroduced prewar 'Diana' airguns to the British and overseas markets. A factory was opened in Carfin, Scotland, which was popular with postwar authorities on the basis airguns were made in Scotland rather than Germany, thereby creating jobs during a period of austerity.

Milbro claimed to have made over a million airguns by 1970 (pre-decimal Milbro Guide to Good Shooting) and their products remained popular for more than three decades before Milbro became insolvent in 1982. The company's air pistols were a little more varied and consisted of the push in barrel Model 2, the G10 repeater, which was an American design, the French patented Cub and the Mark IV/G4 air pistol.

The Mark IV was also based on a prewar German design, formerly made by EM-GE and known as the Zenit. Some Zenits were badged as Stiga air pistols, whilst others were made as repeaters. All had a serious safety flaw in that the end cap was secured to the air cylinder by a bayonet fit. Consequently a coiled mainspring with a relatively insecure end cap was not something that you could confidently hold in line

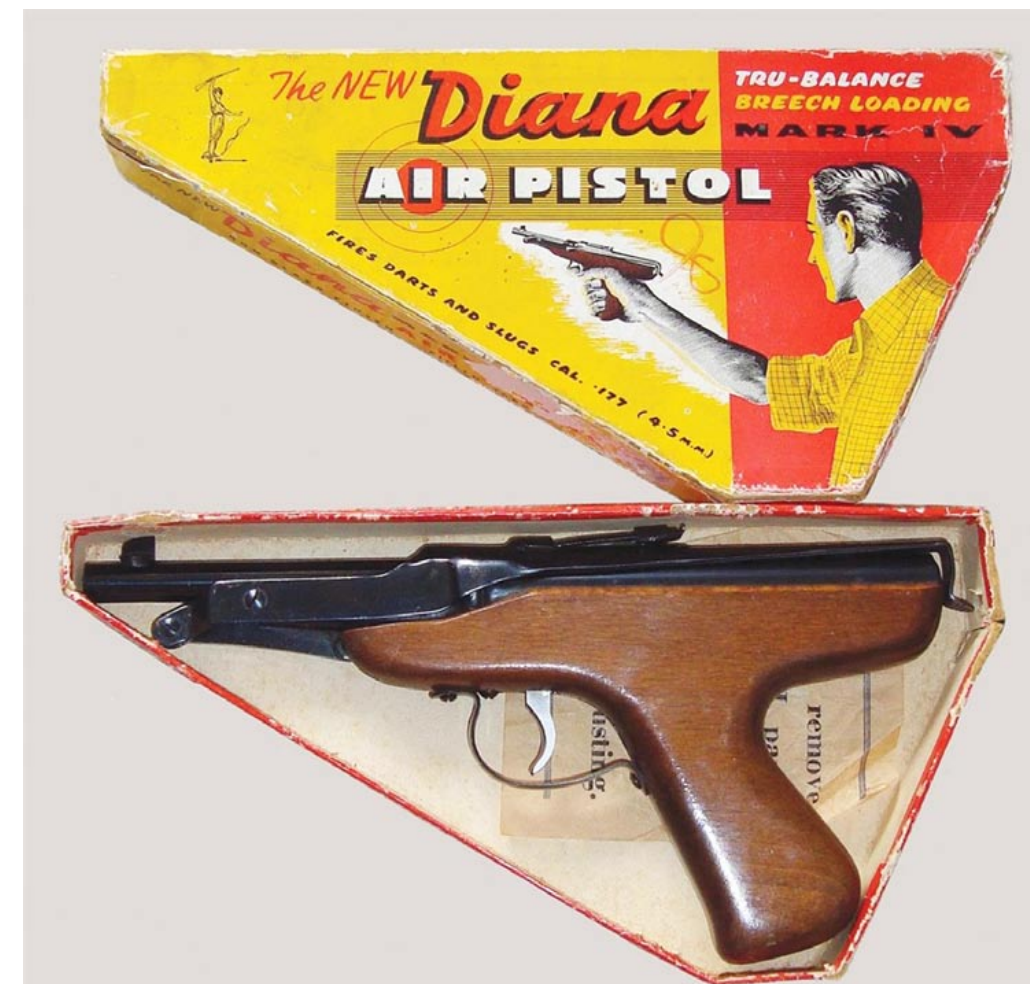
with your eye when sighting a pistol. Indeed, Dennis Hiller explained how he would place a thumb over the end cap when testing the Zenit in the 3rd edition of *Air Pistols*.

Milbro improved upon the Zenit by extending the overlever so the tab at its rear sits over a protruding stud machined into the end plug and which retains the tab in position. A pinned circlip held the plug in place and on pistols made from the late 1960s onwards; a threaded plug with two depressions either side of the stud for a special tool replaced the earlier pinned cap.



Date codes were stamped on the base of the grip until the 1970s

I am indebted to John Atkins for painstakingly looking through all of his archived *Meccano* magazines between 1950 and 1958 for references to the Mark IV. There was no mention of the Mark IV until April 1957, when an advert refers to two Milbro air pistols. A quarter page advert picturing the Mark IV was included in the May 1957 issue and references made to the Mark IV appeared periodically thereafter. The earliest Mark IV I have encountered was date stamped 6 57 for June 1957 and the latest date stamp seen is 4 81 1 (April 1981). There are no mentions of the pistol in 1977 issues of *Airgun World* among adverts for the G2 and SP50 pistols nor a circa 1980 Milbro catalogue, but it appears the pistol was still available up to at least 1981.



1950s Mark IV with slide adjustable rearsight. Seen here with the rare six-sided box. Image courtesy of Trevor Adams



The slide adjustable rear sight has only been seen on late 1950s models



A non-adjustable rear sight from a 1964 dated Mark IV



Mk. IV AIR PISTOL

Model G4 Pistol.
This De-Luxe Model attains a new standard in Air Pistol technique. Light-balanced trigger action. **Solid Steel Barrel.** Special knife type front sight—fixed rear sight. Polished Beechwood stock. Fires darts and slugs.

Overall Length: 11" (28 cms.). Weight 1½ lbs. (0.6 kilos.) Calibre: .177" (4.5 mm.).

Model G4R Rifled Bore. Model G4S Smooth Bore.
Effortless Cocking Superb Balance

G4R £3 - 19 -

G4S £3 - 19 -

Mark IV with chequered grip panels and fixed sights from the 1962/3 Milbro catalogue

There is some anecdotal evidence of introduction prior to 1957 in the form of a personal recollection from John Griffiths, author of *The Encyclopedia of Spring Air Pistols*. John has kindly allowed me to share his recollections of window shopping in Steelhouse Lane, Birmingham during 1953 and spotting the Mark IV alongside Webley Senior, Mark I and Junior air pistols. John and his friends spent a lot of time wondering how the Mark IV cocked and the following year, John's excellent exam results were

rewarded when his father bought him a brand new Webley Senior just after his 12th birthday. The Diana was temporarily forgotten.

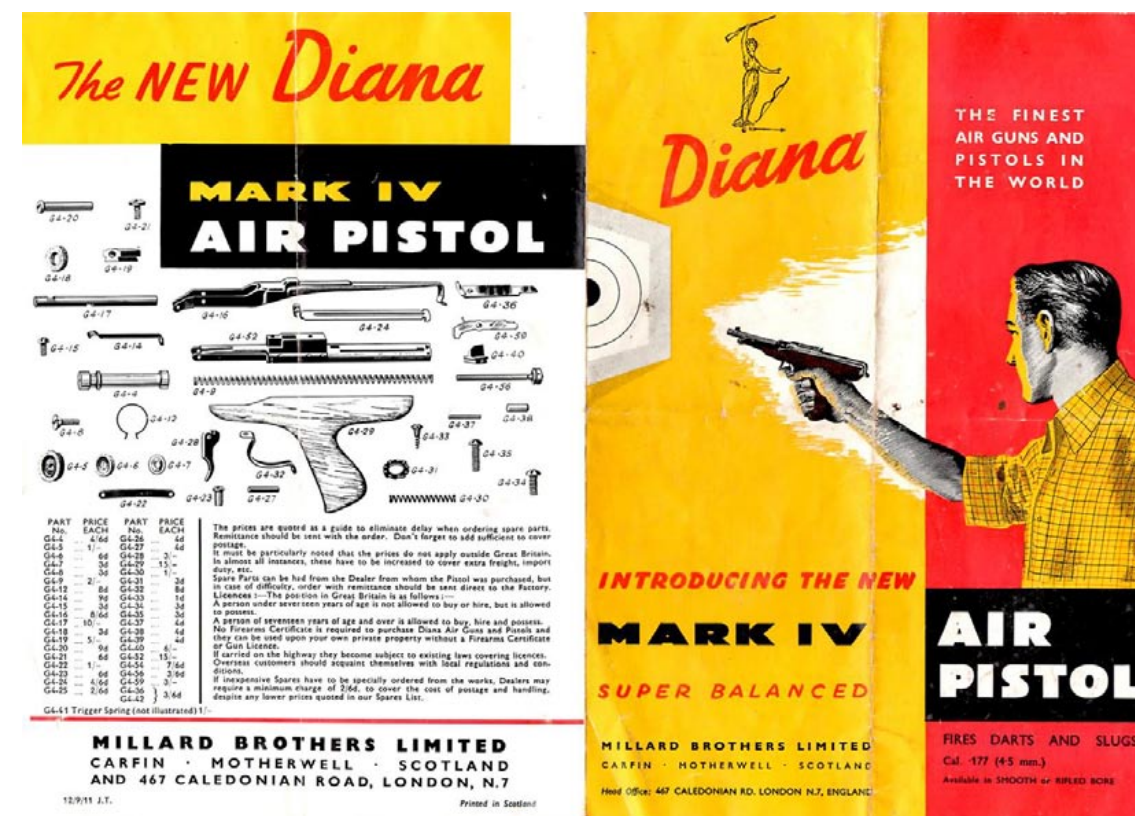
Both rifled (G4R) and smooth (G4S) bored IV pistols were advertised, with rifled being far more common in my experience. A 1962 Milbro catalogue describes the Mark IV thus:

This De-Luxe model attains a new standard in Air Pistol technique. Light balanced trigger action. Solid Steel Barrel. Special knife type front sight—fixed rear sight. Polished Beechwood stock. Fires darts and slugs. Overall Length: 11" (28 cms). Weight: 1 1/2 lb (0.6 kilos).

With its compact profile and rear overhang the Mark IV is well balanced. A beech stock holds the blued steel action in place, which is ambidextrous in nature. To cock the pistol, a rear



A Diana Mark IV stamped 864



Outer pages of leaflet accompanying early Mark IV pistols



creepy but light enough to be accurate against tin cans placed up to 10 yards away.

The manufacturing date of the Mark IV/G4 is usually stamped on the base of the pistol grip and consists of the last two digits of the year stamped between two single digits, the first of which looks to have been the month of manufacture. A dark brown

Inner pages of instruction leaflet accompanying Mark IV pistols up to circa 1965

sprung lip is forced over the stud located in the centre of the end plug and which holds the cocking lever in place. The cocking lever is then lifted up and forward until the sear engages with the piston. This action partially raises the breech of the barrel, so that a pellet may be loaded directly into the barrel. A leather washer fits a recess machined into the barrel's breech and acts as a seal between breech and air cylinder. An anti beartrap mechanism prevents the sear from releasing until the

cocking lever has been returned to battery. Cocking effort is relatively light but audibly graunchy on later models due to the lack of a spring guide. Trigger pull is



Each box from circa 1960 onwards had a neat recess to safely retain the muzzle

walnut stain was applied to pistol stocks until at least 1967 but by 1969, a paler varnish had replaced the earlier type. The latter was not as attractive in my view.

The Mark IV went through a number of subtle changes during its production life, most of which related to the sights and markings. The box carton the pistol was supplied in was also made in several variations, some



G30 Micrometer Sight



Mark IV stamped 4 66 4 with tall foresight and G30 micrometer rearsight

of which can provide quite a challenge for the collector to track down.

The pistol was generally referred to as a Mark IV and the top of the

cocking lever stamped as such. G4 was the Milbro catalogue code and



This 1965 dated pistol's box came with a sticker advertising the G30 Micrometer sight



Early (top) and late knife profile foresights. The late sight is scarce



Markings on early pistols up to circa 1969 included the huntress trademark



The early pillar foresight (top) had a more angular hood than the later variant

was also printed on later box lids from the late 1960s. Early Mark IV pistols made up to at least 1967 may be identified through the presence of the huntress trademark on top of the cocking over-lever. This had been mainly discontinued by 1969, although one 1972 pistol is known, which still had the trademark alongside a Series 70 stock medallion.

Early tangent rearsight and six-sided box

The earliest Mark IV air pistols were fitted with a sliding elevation adjustable rearsight and dovetailed blade-shaped medium profile foresight. I once owned such an example which was dated 6 57 on the base of the grip.

The 1950s pistol was initially presented in a six-sided box, which followed the contours of the pistol but only allowed enough



The Milbro G4 box graphics were redesigned completely during the late 1960s

additional internal space for a folded instruction leaflet. It would certainly have stood out among other air pistols in a shop. The internal base was coloured white with red sides and external base.

Change to a non-adjustable rearsight

By 1958 the tangent sight had been replaced with a fixed pressed steel unit that remained a standard fitting until at least 1964. An example of a fixed-sighted pistol dated January

1958 was included in the 22 March 2012 Holts Sale (Lot number 623).

The 1962-3 season Milbro catalogue illustrates a Mark IV with the simple non-adjustable fixed rearsight. The pistol was described as a De-Luxe



The Milbro name was only used for a short period of time approximately between 1969 and 1971



G104

The window display box was advertised towards the end of the 1960s and consisted of a complete shooting set

model and although the description made no reference to the grips, the accompanying illustration pictured chequering within a panel on the

right side of the grip. I have not encountered a Mark IV with chequered grips but some are bound to have been made.

Four-sided box

The box was changed from six-sided to a more conventional four-sided during the early 1960s. The box lid retained the image of a shirt-sleeved shooter lining up a Mark IV and additionally listed the pistol's advantages such as improved

balance and comfortable grip. Close examination of the box illustration reveals the image of the early slide adjustable sight and this depiction was used on all boxes of this style.

A rectangular piece of white coloured wood glued to the left side of the base had a round recess to secure the muzzle and this prevented the pistol from moving around in the box. A smaller piece of wood on the opposite side helped to retain the tab of the cocking lever when the pistol was housed within its box. As with the six-sided box, the internal base was white, whilst sides and bottom were red. This colouring scheme was retained on bases until the Series 70 pistols were introduced in 1970.



Milbro reintroduced the Diana name from circa 1971 and added a medallion to the stock

A piece of rust-proof treated V.P.I. (Vapour Paper/Phase Inhibitor) paper was thoughtfully placed in the base and this too can be encountered on later models. One such pistol examined was dated 1963 and another, '864', is illustrated.

The G30 micrometer rear sight

By 1965, a micrometer rear sight had replaced the fixed rear sight and remained a standard fitting on this model until it was finally discontinued. The sight was also fitted to the G34, G36 and later G76 air rifles. It was click adjustable for

Milbro typewritten instructions for the G30 micrometer sight

The micrometer sight provides a means of extremely accurate adjustment of the sighting of the pistol according to the range.



Diana stock medallion

To adjust, the following procedure should be adopted.

For an increased range, the adjustment screw should be turned in a clockwise direction. A complete revolution, i.e. 10 clicks of the screw, will raise the elevation

by approximately 3/4" for each 10 yards of target distance. The screw should be turned through the approximate number of complete revolutions required and final micrometer adjustment can be made

on individual clicks of the adjusting screw.

Where it is decided to adjust the pistol to zero on a reduced range, the above procedure should be reversed.

Mid-1960s

A monochrome A4-sized folded instruction sheet was included with each boxed set and there was also room for a few target cards and a tin or box of Milbro pellets or slugs. One such pistol is marked 2 65 5 on the heel of the stock and is stamped with the huntress trademark. The blade-profiled foresight on this pistol is taller than previous versions, which is ideal as the Mark IVs tend to shoot high. The box carried an additional small gummed label on the lid. This label announced WITH



Series 70 stock medallion

elevation and featured a viewing window for the selected setting, which was a numeral from 0 to 9. Mid-1960s pistols fitted with the micrometer sight still had blade-profiled foresights.



G4s from circa 1971 onwards were date coded within the stock



This monochrome boxed G4 is stamped 4 81 1 inside the wooden stock

NEW MICROMETER CLICK-ACTION SIGHT over two lines. The label was placed just ahead of the image of the pistol's muzzle. A slightly later boxed pistol stamped 4 66 4 was briefly in my possession and that also had an identical tall foresight.

Early pillar foresight and angular hood

By 1967, the tall knife-profile foresight had been replaced with a screw in pillar sight of simpler construction. The sight was mounted on a 30 mm long dovetailed block and was protected by an angular sprung hood. Later models from the 1970s were fitted with the same pillar sight with a shorter base and the hood was more rounded in profile.

Window display pack

An undated circa 1966-68 Millard

Brothers catalogue advertised the Diana Mark IV as part of a Safety Air Pistol Display Outfit coded G104. Also called a 'Window display' box, this style of presentation had been previously used to market the Model 2 air pistol as well as some of the company's smaller air rifles. The name came from the lid being made of clear plastic, which displayed the set's contents comprising of the pistol, a Milbro target holder with wooden insert for use with airgun darts, some card targets, a box of Caledonian pellets and a packet of 100 red Milbro plastic pellets intended for indoor practice.

The circa 1966-68 catalogue still includes smoothbore-barrelled G4 pistols but by 1968, smoothbore barrels were no longer listed as an option in Milbro catalogues. At around this time, the shade of varnish used on the wooden grip was

lightened in colour from a dark walnut shade to a lighter brown.

The Milbro G4 and redesigned box

By 1968, the pistol had been renamed the Milbro G4. A Milbro catalogue from 1968-69 explained the company had originally marketed airguns under the Diana name but in view of the strength of their own Milbro trade mark over recent years, it had been decided to mark all airguns proudly with the Milbro brand name.

The picture on the box lid was redesigned and rather than an image of the shooter using the pistol, the box lid now featured a large image of the pistol upon a yellow background. The imagery pointed out the pistol had been improved with the addition of an exclusive micrometer click action sight, whilst the base remained as before. The huntress trademark and Diana name were omitted from the top of the cocking lever on the pistol and replaced with a stylised 'Milbro'. Both Milbro- and Diana-marked pistols were made during 1969. For example a pistol numbered 1 69 4 is marked Milbro on the cocking lever, whilst 1 69 5 was still stamped with the Diana name and trademark. A later Milbro-marked example is stamped 9 70 4.

The Series 70 models

The whole range of Milbro/Diana airguns was revamped at the

start of the 1970s and marketed as the Series 70. The Diana name was reintroduced and the Milbro name on the box lid replaced with Diana. A Milbro Series 70 pamphlet claimed the Diana name had been reintroduced because that is the name customers had been asking for.

The former red and white base of the box was changed to plain white and the pistol illustration was updated to show the later rounded style of foresight hood. The illustration of the pistol now carried a medallion on the left side of the stock, as did the pistol itself. Two styles of medallion are known: either the word *DIANA* within laurel leaves or *DIANA SERIES 70* around the huntress trademark. The medallions are made of very thin metal and are stamped with the relevant logo. The glue used to fix them within their recess was not very strong and they are easily detached.

Milbro spare parts lists from the 1970s suggest two different types of stock medallions were offered concurrently under the Milbro and Diana names. The spares list describes one medallion as a Diana and the other a Milbro, so there may be a third variant out there.

Series 70 pistols were simply marked *MARK IV MADE IN GREAT BRITAIN* on the cocking lever. The Diana or Milbro mark was omitted and the only clue to the maker was the medallion, which is often missing on used examples of this pistol.

The date stamp on the heel of the butt was moved to the inside of the stock at

around this time. The stock had to be removed in order to see the stamp and the earliest known date to me is 10 72. I have also examined 4 75 and 6 76 4, which both had stock medallions.

Milbro did not just market guns but fishing tackle alongside sports products such as darts too. They were therefore able to sell their wares through fishing tackle shops such as Raycraft's of Selsey. A yellow-boxed Series 70 pistol has survived with the original price tag of £16.99, which is also adorned with the shop's address of 119 High Street and their 1970s telephone number. The shop was still trading in 2016. An export Series 70 G4 has also been seen, which carried additional markings on the left side of the barrel consisting of *PERFECTA CAL 4.5*

MM and the 'F' within a pentagon continental power mark. The stock finish was a dark brown stain and a *DIANA* medallion was also present.

The final box style used for the Diana Mark IV was a plain monochrome design. The illustration was of the pistol's silhouette and the wording simply said *DIANA G4 AIR PISTOL*. Base sides were still white but the internal base itself was now a plain beige natural card shade and the lid sides were no longer marked in any way. The stock medallion was no longer fitted to later versions of this variant and the latest internal date stamp known is 4 81 1. The same basic monochrome style was used on late SP50 boxes.



There were subtle differences in box side labels, as can be seen here. Earliest style is at the bottom with last on top



Late G4 omitted huntress trademark and Milbro name on the cylinder

Performance

The Mark IV was more of an introductory than serious target pistol, despite Milbro's claims of it being suitable for sport and target work on their early advertisement leaflets. The overlever is easy to release and push forward and up in order to cock the pistol. The end of the overlever is a lightly sprung pressing, which engages against the

protruding stud at the rear of the air cylinder's end cap.

Raising the overlever allows a leaf spring to raise the breech end of the barrel ready for loading a pellet or dart/slug in the case of a smoothbore version. The overlever is then moved back and over the protruding stud to be retained securely in place. Pistols tend to shoot high, even with an adjustable

undated Series 70 pistol I tested grouped very close to the point of aim at 6 yards and I was pleased to see a group forming on the vintage Milbro target card I used for the test.

I found a typical Mark IV was more consistent than a modern CO2 multi shot and more accurate, in that there were fewer fliers, and the pistol was consistent irrespective of the temperature. The Mark IV fires

rearsight lowered as far as it will go, so the mid-1960s taller foresights were certainly a practical option. Power is around 1 1/2 ft lbs and the pistol is capable of mangling tin cans placed 10 yards away or dropping fairground 'finger' targets placed 6 yards away. One



Six yard group shot from this Diana G4 on an original Milbro target card



Pinned end cap on early pistols

waisted pellets rather than ball and this, together with a rifled barrel, have an advantage over CO2 multi shots.

The Milbro Mark IV was a classic British/Scottish design with a prewar German pedigree and good boxed examples may still be found for sale well under £100. There are enough variants to keep enthusiastic collectors satisfied and acquiring them is unlikely to break the bank. Not yet anyway. These pistols deserve a place in a representative collection and can be easily found as well as enjoyable to shoot, just as long as expectations are managed and targets are not too challenging to hit.

Disassembly

Early pistols with pinned end caps are easy enough to dismantle but reassembly requires a helper with another pair of hands to hold the circlip ends together while the end cap is compressed against spring pressure. A spring compressor

would be very useful for this pistol. Later pistols dating from the end of the 1960s onwards had a threaded end cap with two depressions machined either side of

the protruding stud, into which a special tool was inserted and the cap



There is significant mainspring preload on the Mark IV

unscrewed. Reassembly is difficult with this pistol too, as there is no spring guide and a lot of mainspring preload.

If the pistol fails to cock when reassembled, the rear stock fixing screw may be too long and/or missing its washer. The remedy here is to add a suitably thin washer

behind the screw head, which prevents the screw from pressing against the sear and stopping it from engaging with the piston during the cocking process.

In Summary

The Mark IV/G4 series of pistols were presented in solid card cartons, which have survived relatively well due to their sturdy construction. There are numerous varieties for the keen collector to track down and

although low powered, the pistols remain capable of mangling tin cans at realistic distances on the range. These pistols were a true British classic and remain one of very few classic air pistols which can still be found relatively cheaply today.

©John Milewski



The screw in end cap can be seen on this mid 1970s G4

Gentlemen with spectacles

Mike Driskill reviews factory aperture sights for the classic Webley Mk3 underlever. They transformed a rifle with very basic standard rear sight equipment to one with a range of upraded fully-adjustable match sights, making it a tool capable of impressive accuracy.

According to Chris Thrales' excellent book "Webley Air Rifles," the company's premier entry for the post-war airgun market was actually a copy of another rifle. Webley's parsimonious management made the decision (incredibly, BEFORE the end of WW2), to duplicate the pre-war German Diana model 45 underlever, as their new top-of-the-line Mk 3! While incorporating superficial alterations such as moving the tap lever to the right side

of the breech, and using stock styling more to British tastes, copying an "enemy" airgun--and one heavily influenced by Webley's pre-war rivals from BSA to boot--can hardly be called innovative.

Arguably the pre-war detail that translated least successfully to post-war tastes was the Mk 3's rear sight. It was beautifully made and strong, but small, and with a built-in adjustment for elevation only;

lateral changes required drifting it in its mounting dovetail. Combined with the Mk 3's inability to mount a scope in its early iterations, the rifle's standard sighting equipment compared poorly to the complex, fully-adjustable units seen on many competitors in the postwar market.

This rather obvious gap created a market for improved sighting equipment for the Mk 3, and so upgraded sights were made



Three Webley Mk3 air rifles



Webley Mk3 no. 16494: .22 sporter, with optional Parker-Hale PH 16M left side



Webley Mk3 no. 16494: .22 sporter, with optional Parker-Hale PH 16M right side

available to the discerning owner from the gun's early days.

Serial 16494: .22 sporter, with optional Parker-Hale PH 16M

This is my oldest Mk 3. It's not only cosmetically very nice, but quite well-tuned by the previous owner--an accurate, hard-hitting, and all-round delightful can-roller. Thrale notes this serial as a "Series 3" sub-variant, from the early 1950's. All Mk 3 sporters handle well--trim but solid in the hands, easy to carry, and swinging to the shoulder like a good bird gun--but the extra slenderness of the early stock is even more superb.

The finish quality of the action is remarkable, and it abounds in details omitted on later examples. The closely-fit cocking linkage, grip-enhancing serrations on the cocking

arm, and the graceful curved solid steel trigger blade all catch the eye.

But the rifle's outstanding feature is the Parker-Hale PH 16M rear sight.

This variant of the PH 16 "Sporttarget" series, with a base designed specifically for the Mk 3, was offered as an option by Webley for many years. In my opinion, it's a brilliant design: strong, compact, precise, and unobtrusive.

The fine adjustments register on cleanly engraved reference scales that are visible from the rear. The slender windage "arm" of the sight also swings out of the way, allowing



The finish quality of the action is remarkable



The Parker Hale 16M sight ready for action

continued use of the open rear sight if desired. The PH 16M was usually

seen with the tiny "S" eyepiece, but accepted larger PH models as well.

This combination of classic rifle and classic sight, is to my mind one of the most desirable Mk 3 variations.



The Parker Hale 16M sight open and removed from the sight line

Serial A2577: .177 Supertarget with Parker-Hale PH 17B

This rifle was acquired at one of the late Fred Liady's early shows (the first US all-airgun events), in Winston-Salem, North Carolina. I just happened to be in the right spot when the seller unboxed it...a line formed behind me in the time it took to extract my wallet! Thrale's book notes it as a "Series 7" Mk 3, from the second sequence of "A"-prefix serials, one of a group of Supertargets dispatched in November 1970.

The previous owner acquired it from Navy Arms, a US distributor



Webley Supertarget with Parker-Hale PH17B diopter sight, left side



Webley Supertarget with Parker-Hale PH17B diopter sight, right side

of surplus military goods, who stated this was one of two Supertargets sent by Webley's to firearm manufacturer Harrington & Richardson, to gauge H&R's interest in distributing the Mk 3 in the US. I lack documentary proof of this, but there are three bits of circumstantial supporting evidence: 1) it arrived in an H&R box; 2) it had no rear sight (it's common to omit such expensive accessories in an "insider" transaction); 3) the companies had a strong pre-existing relationship, as H&R not only imported Webley air pistols, but also license-manufactured Webley self-loading firearm pistols.

Here in Tennessee, we don't let the truth stand in the way of a good story, as the saying goes... so I'm leaving it at that! Details

of its genesis aside, this Supertarget is in near-perfect condition, and one of my very favorite air rifles. This rifle definitely displays some cost-cutting measures compared to the

older example, yet retains thoughtful touches like oil-finished wood, and a browned finish reminiscent of old-time case-hardening, on the sintered trigger and tap lever.



This rifle had a plainer loading tap than the earlier Mk3, but nicely finished



The Parker-Hale PH 17B: a sophisticated unit



The PH 62 eyepiece



The PH 'Iris' infinitely-variable eyepiece

And those sights! The early Supertarget sports the Parker-Hale PH 17B rear, a sophisticated unit intended for very precise target work; though one might argue its higher sight line is not well matched to the Mk 3's sporting stock design. The usual eyepiece supplied with the Supertarget was the PH 60 seen here, but it also accepts any other PH eyepiece, such as the PH 62 with its lovely phosphated steel eye shade, and the PH "Iris," with infinitely-variable aperture. Another distinctive Supertarget detail is the PH DB 1 "disc box" under the grip, for holding the front sight elements.

The higher sight line was combined with a ramp-mounted tunnel sight, the Parker-Hale FS 22A, on the early Supertarget. As a point of interest though, the PH 16M and PH 17B are interchangeable on the Mk 3, mounting via identical screws in identical locations, and the latter has enough vertical adjustment to work



The PH DB 1 'disc box' under the grip, for holding front sight elements.



1974 Webley Mk3 Supertarget with Anschutz diopter sight, left side



1974 Webley Mk3 Supertarget with Anschutz diopter sight, right side

satisfactorily with the standard Mk 3's post front sight.

**Serial B8841:
.177 Supertarget
with Anschutz
6706**

This later Supertarget still fits in Mr. Thrale's "Series 7," and left Webley's in November 1974. While still a remarkable product, some further cost savings are evident. The dark



Varnished walnut stock with 'fiddleback' pattern



Anschutz 6706 rear diopter sight with contemporary Anschutz-made iris

stock wood, though with lovely grain and flashes of color, is now finished in gloss varnish, the finish on the tap and trigger has devolved to mere black paint, and assembly tolerances are perhaps a little less controlled.

This Supertarget version of course traded Parker-Hale sights for the well-respected Anschutz model 6705 or 6706 diopter sight (the latter on this rifle). Both front and rear sights are clamped to stout steel dovetails screwed to the action. If not as beautifully made and finished as the PH sights, the famous Anschutz units are of undoubted precision, and allow use of the

vast range of adjustable eyepieces, polarizers, color filters, magnifying lenses, and other accessories from German makers. A contemporary Anschutz-made iris is seen here.

The 6706 sight was originally designed for rifles with stout recoil (including Anschutz's own model 335S target air rifle), differing from the 6705 in having a large Weihrauch-style stop thumbscrew on the top. But on the Mk 3, the thumb screw is omitted, and its mounting hole used to access the gun's sear-adjuster screw--a truly ingenious adaptation.



The Anschutz 6706 sight from above

If thoroughly outdated as a "serious" target air rifle by the 1970's, the combination of the classic action with modern match sights certainly makes for a unique, and very usable collectible.

According to tradition, fabled automotive designer Ettore Bugatti coined the phrase "A triumph of workmanship over design," as a subtle dig on his British competitors. One could argue that no classic air rifle fits that

phrase better than the Webley Mk 3! But, I submit that the Mk 3's anachronistic, hand-hewn nature, holding forth as it did in a world of mass-produced rivals, is really the essence of its appeal.

This Webley's obstinate quality far transcends its sketchy design pedigree. To handle and study one is to learn volumes about the high standards of its materials, detail design, and construction and finish quality. The hands of the Mk 3's builders really seem to transmit to each example a personality all its own, too. These beautiful rifles seem less like mechanical objects, and more like individual friends, than any other airguns I've owned.

And with the right sights, the Mk 3 is also a superb shooter that even slightly over-the-hill, myopic airgun collectors such as me, can still enjoy!

©Mike Driskill

The Belmont School sniper

Many of us have stories to tell about our harmless misadventures with airguns as kids; events that are seared into our memories for life. But Barry Iacoppi actually did what most youths only dream about doing – fired pellets into his school building when it was empty during the holidays. As he relates, it helped that he lived just across the road...



Barry's BSA Improved Model 'D'

It was 1961 and I was 13 when my father allowed me to bring the BSA Improved Model 'D' from our hunting ground in Chester-Le Street back to the big smoke of London. I was allowed to keep it in my room of our Wood Green house. Not that we ever called it the Model D. It was referred to as 'Dad's rifle' or 'THE BSA'.

The rules were straightforward. The rifle could be shot in our garden range at any time provided I adhered to the strict safety code that dad had drilled into me. Care and maintenance would also be my responsibility. Made in 1911 the BSA had no doubt had some spring and washer changes before dad bought it

in 1946 but apart from dad replacing the washer with one home made from some old leather ex cavalry saddle bags I never recollected him replacing the spring. As the new joint owner I saw it as my duty to rectify this.

I wrote to BSA telling them what was etched on the rifle and asked them the price of a new spring and how could I mount a telescopic sight on this rifle. Yes, I know that is sacrilege but remember I was 13 and the rifle a mere 50 years old then. I got a prompt reply from BSA giving me a price of, I think, five shillings and a brief note explaining that my rifle was not made to take a telescopic

sight and that I should consider purchasing one of their more modern rifles if that was what I was after. They enclosed their standard Merlin, Meteor, Airsporter sales pamphlet. My paper round allowed me to buy a postal order almost



Teenage terror: The Belmont Sniper

immediately and what felt like an eternity later a cotton bag with an addressed luggage label arrived from BSA. The spring was here.

I knew how to strip the rifle as I had seen dad do it many times but he insisted on being present for the first spring transplant. The spring we removed had been augmented by a few spring washers and dad thought it best that at least one of them go back with the new spring. The new spring was a good inch longer than the old combination but it went in without a hitch. We took the opportunity of giving the innards a good clean. Not that it needed it but there is something oddly satisfying about polishing old metal with an oily rag. With the piston out dad chose to oil the washer. Out came mum's Singer Sewing machine oil and if two drops are good eight must be better. Dad knew a lot about guns and had it been a Bren, Thompson or

Lee-Enfield the exact amount of the right oil would have been used but this was our first real air rifle and we were winging it.

Back in the early sixties there was no such thing as running-in times. You fired enough shots to expel the surplus oil and you were good to go. The new muzzle velocity was scientifically measured by firing a pellet into mum's clothes prop and comparing the penetration with previous shots. There was no doubt about it. The BSA had taken on a new lease of life and I was now able to recognise the lovely smell of burning Singer sewing machine oil.

Our garden range was a simple affair. A wooden step ladder at the bottom of the garden with targets on the rungs and a stout wooden fence acted as a back stop. Fifteen yards maximum. A closer range could be achieved by putting targets

on the bird bath between our firing point and the step ladder.

Thousands and thousands of pellets went down that range. Sometimes friends would join me with their inferior rifles but mostly it was me shooting. Tins and Airfix toys were the first choice of target but I did realise the importance of paper targets to measure true accuracy. I remember one summer's night firing at a cardboard grocery box on the bird bath. The light was failing and a friend and I had a bright idea to extend our shooting time. We carefully put a lighted candle into the bottom of the box and we were rewarded by a spot of light with every shot that penetrated it. We had never heard the American expression "plinking" but we knew that plinking was great fun.

When not in use the BSA was kept in my room at the back of the

wardrobe and a tin of pellets on top. Every time I opened the wardrobe there was the BSA beckoning to me. Tempting me.

Belmont Secondary Modern was my senior school; a dismal Victorian building that was little more than a holding pen for children who had failed their eleven plus. With a few exceptions the teachers were at best average, and very few of us kids had any academic aspirations. It was a rough, tough school by the standards of the day. I had some good times and made some good friends there but it was not a favourite period of my life.

We lived at 63 Mannoek Road. The road was named after a WWI fighter ace and at our end it ran into Downhills Park Road where the Belmont school was situated. Half of the school frontage was visible from my bedroom window and indeed it

was just 29 paces to the entrance for girls and 129 to the boy's entrance.

When I drew my curtains in the morning, there it stood. It was there at weekends and during the holidays; a constant reminder of the suffering to come. It was also within range.

I knew I would lose the BSA if I misused it, but also knew that with careful planning I could – and as it turns out did – get away with it. Hence the Belmont Sniper was born.

I planned my first attack with military precision. Why else did you think that I knew exactly how many paces the two school entrances were away? My first target was to be the long metal road sign attached to the school's front wall. It read DOWNHILLS PARK ROAD N.17.

School holidays. Mum and dad at work. Sister out. Window wide open.

Curtains almost totally drawn. Inner net curtains indicate little or no wind. Bedside chair moved to provide rifle rest. Careful not to allow muzzle to protrude through window. Quick check for pedestrians. None. Cock rifle. Take pellet and give head a quick polish on shirt. Well known fact that – polished pellets are far more accurate than normal ones. Take aim. No holdover. Three deep breaths. Let out last breath, hold and fire. Nothing. Pause and repeat sequence. Cock, polish, load, breathe, fire.

This time aim two bricks high. CLANG! I hit the ruddy thing. Another check for pedestrians and the same again. CLANG. And again. CLANG. Give rifle a quick wipe down with the oily rag and put back in wardrobe. Draw curtains open slowly so as not to attract attention. Close window. Plan next attack.

Barry's bedroom



Mister Frost was our geography teacher. A very thin man in a suit that had once fitted a bigger man. He would pace up and down in front of the class brandishing a bamboo cane. Despite his posturing, the man was weak and fragile. The class sensed his weakness and played on it. Discipline was a foreign word in Mr. Frost's class. Rumour had it that he had been a prisoner of the Japanese during the war but this did not bring him the respect that he so deserved and craved.

The geography room was the same as all the other classes, with nothing to indicate its connection with geography other than a metal globe hanging from the ceiling. The globe was double the size of a football. Nothing was written on it. Just the silhouettes of the land in a dirty off-white on a matt black sea. Just before the end of the summer holidays, cleaners had come to the school. They spent days working their way through the school and when they had finished in the geography room they mistakenly left a window open. First floor. High up and no security risk, but in range.

Almost the same range as the road sign I knew that I had to loop the shot through the open window and across the class to hit the globe. I could see the globe clearly from my room but could only give it a four-inch holdover for fear of hitting the window. I think my first shot hit and bounced off the wooden frame at the top of the opening. The second shot just scraped in and as I was to find out later I had made a dent

in South America. Well the earth moved for me that day and from my window approximately 60 yards away I could see the globe gently swinging.

When school resumed after the summer holidays I was very careful about who I confided in about the Belmont Sniper. Getting cocky could get you caught and I had no intentions of that happening. However, I wanted to show off my daring shooting prowess but apart from a small dent in Brazil that I could not prove I was responsible for, I had to find another way to prove my power.

My chance came during a metal



The original sign: still there 55 years later

©2016 Google

work class. Mr. Greer was the least popular teacher in the school. Very hard on discipline and an unjust bully of a man. Greer had the class assemble around a lathe and was about to demonstrate something when his desk phone went. He left us standing there whilst he went to answer it. After about five minutes it was obvious to us they he was engaged in a personal conversation and had no inclination to dismiss us to get on with our work.

I nudged my friend Dave and out of the corner of my mouth said. "The

window. Top left". I indicated the large window above the lathe that was made out of twelve smaller foot square panes. Dave was confused and mumbled something about what was I on about. "Just check out the window pane top left," I said and he did. Greer finally returned and Dave promptly forgot about the apparent pointless exercise. That is until the following week when we were again in the metalwork room and working at our benches. "Check out that window top left," I said. Dave did not want to play this silly game again but after some goading he checked out the window, top left. This time there was a massive crack in it running almost diagonally from corner to corner and an obvious impact chip at one place along its length. I smiled at Dave and pointed my thumb at my chest. The Belmont Sniper had struck again.

One Monday morning at 8.55 the bell went and in Colditz fashion we boys quickly assembled in lines in the playground facing the back of the

school. There we waited until class by class we were ordered to file into the school. As we stood there, half asleep, Dave said to me. "Is that one of yours?" He raised his eyes to the high gutter on the school roof. A dead seagull lay trapped in the gutter giving a morbid salute with one wing as the wind caught it. I gave Dave a smile and a wink.

The Belmont Sniper struck a number of times again but never once did he shoot at or point his rifle at a person.

@Barry Iacoppi

Replica Webley that never was

Canadian shooter, collector and airgun doctor, Leonard Joe, describes in this pictorial building a working replica of the 1910 Webley-Whiting air pistol. It was under powered and never went into production but, through the detailed Webley patent drawings that exist, fascinatingly it represents a direction the company declined to take; instead focusing on the successful Johnstone/Fearn barrel-over-cylinder Webley air pistol. The rest is history.

Back in early 2015, John Griffiths began a thread over on the Airgun BBS which documented his building of a Webley-Whiting air pistol. I followed his thread with great interest, and as his project progressed, I found myself inspired to build my own rendition of this unique and rare air pistol. The 1910 Webley-Whiting was to have been Webley's first air pistol, but for reasons unknown, only one prototype was ever made by Webley. Those who have built replicas of the gun speculate that the relative complexity of the design, along with its inability to provide adequate acceptable velocities due to the limitations of its powerplant, were the major contributing factors for the decision to not proceed in producing it commercially.

I contacted John, and he kindly put me in touch with a couple other individuals that had built their own

replicas of the pistol, and between the three of them, a great deal of information was provided to assist in my build. Many thanks to John, Tom, and Mac for the drawings, pictures, and for sharing your experiences of your own builds.

As with any journey, it all begins with the first step, and this picture pretty much illustrates that point. A scaled up copy of the original 1910 patent drawings, and four blocks of steel to begin the four major components of the gun - the frame, the compression chamber, the piston, and the rear end plug. (Fig. 01). Appropriately sized

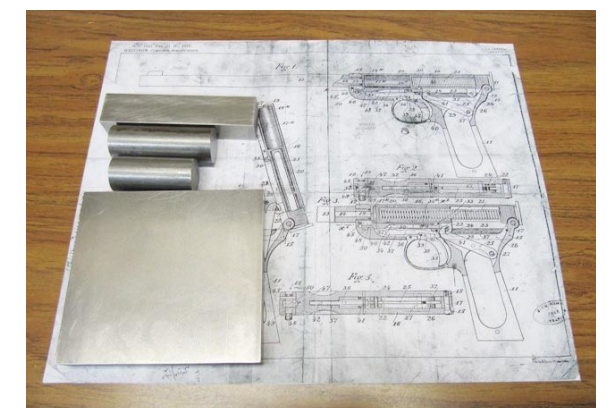


Figure 01

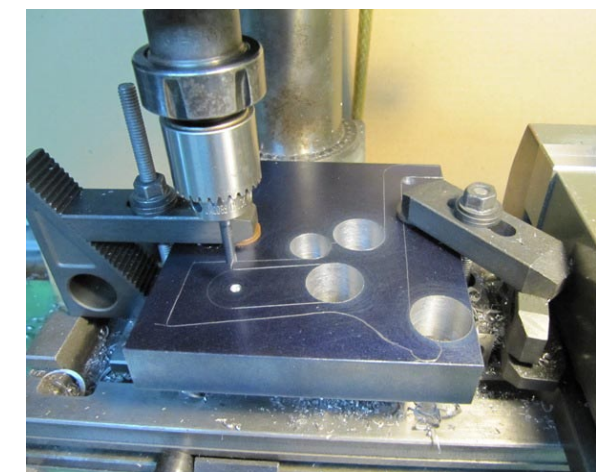


Figure 02

holes are drilled in the locations that result in the required radius at key



Figure 03



Figure 04



Figure 05



Figure 06

points on the frame. The excess material is then band-sawed away. (Fig. 02). The edges are

then milled to size, and the thickness of both the upper portion of the frame, as well as the grip area of the frame are cut to the proper width. (Fig.03 and Fig. 04).

The steel for the compression chamber is then set up in the lathe, and that long, rather small compression chamber is bored. The threads for the rear end plug are also cut. (Fig. 05) As can be seen in Fig. 06, there is not a lot of "wobble room" when machining this piece.

The inletting for the sear and piston lug access are then milled into the underside of the compression chamber, and it is then fitted to the main frame. (Fig. 07).

The one-piece piston is machined to size, and the sear engagement groove is cut. The stock is offset in the four jaw lathe chuck to allow for the machining of the cocking lugs. (Fig. 08).

The cocking link lugs are milled to size, the radius cut on the leading and trailing edges, and the hole for the cocking link engagement pin drilled. (Fig. 09 and Fig. 10).

The piston skirt opposite the cocking link lugs is then cut to size. (Fig. 11). Just a matter of setting up in the lathe again to bore the hole in the piston, and it is done. (Fig. 12).



Figure 07



Figure 08



Figure 09

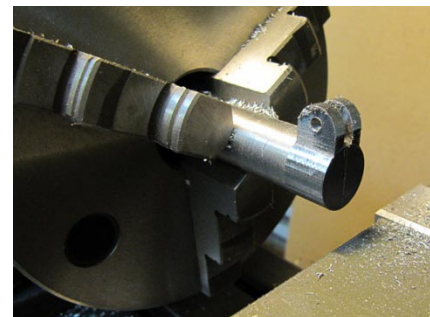


Figure 10



Figure 11



Figure 12



Figure 13



Figure 14



Figure 15



Figure 16

The piston is then fitted to the compression chamber so that it moves freely, but with no excess slop. (Fig. 13).

The compression chamber is then fitted to the lower frame, and the hinge bolt hole is drilled, tapped and counter bored for the fastening screw. The inletting for the trigger mechanism and cocking link operation has already been milled into the lower frame. (Fig. 14 and Fig. 15).

I went with a one-piece rear plug, spring guide, and rear sight arrangement. (Fig. 16). The relief radius for the action hinge has been cut into the underside of the threaded portion, and the rear sight notch has been cut. (Fig. 17).

I managed to find a suitable candidate for the barrel in my stash of barrel cut-offs, in the form of a length of Walther barrel with a 17 mm OD (0.693"). The breech end was cut to size, threaded, and the shoulder for the breech seal cut. (Fig. 18). The muzzle end was then crowned.

An improvised drive dog is made up to fit the thread on the breech, and the taper is cut using the offset tailstock method. The



Figure 17

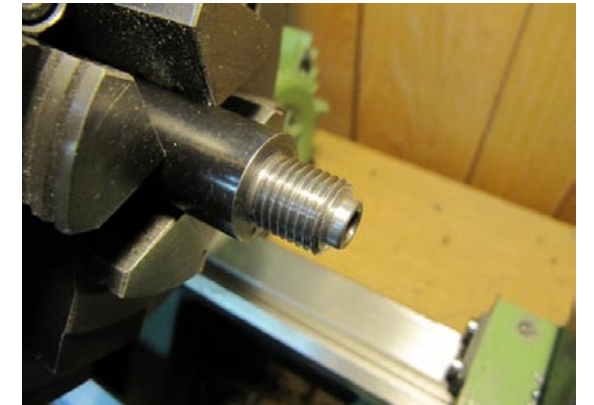


Figure 18

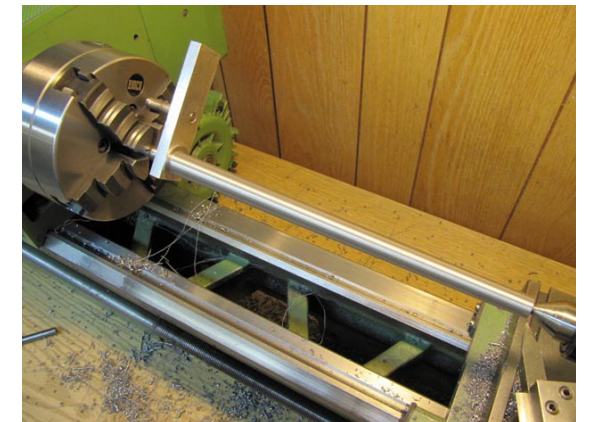


Figure 19



Figure 20



Figure 21



Figure 22



Figure 23



Figure 24

barrel is 0.500" OD at the muzzle. (Fig. 19).

The finished barrel is trial fitted to the frame, and all looks good. (Fig. 20). The gun is really taking shape. (Fig. 21).

A quick rummage through my wood scraps is rewarded with a very nice piece of black walnut, large enough to produce a pair of grip blanks, with enough left over to allow for my learning how to checker, and to allow for me to practice that skill on the very same wood used for the grips. (Fig. 22).

The radius is cut on the top of the compression chamber, the dimples on the sides for grasping the compression chamber for cocking are cut, the hole for the compression chamber latch mechanism finished, and the holes drilled for the trigger component fixing pins. The machining marks are polished out on the sides of the frame and the compression chamber, but there is still much polishing of other detail areas to do. The grip blanks are fitted for the photos. (Fig. 23 and Fig. 24).

Next items to machine are the more fiddly little bits - the trigger parts, the sear, the compression chamber latch parts, the cocking link, the trigger guard, and the front sight. The sear is the first of the small parts to be made. (Fig. 25). In Fig. 26, the sear has been fitted to the compression chamber, and is engaged with the piston in the cocked position. The small set-screw is a refinement that I added, to allow adjustment of the sear engagement.

Next, the trigger assembly is fabricated. This consists of four parts - the trigger, the intermediate sear bar, a small tensioning spring for the



Figure 25

intermediate sear bar, and a short pin to hold the assembly together. (Fig. 27 and Fig. 28).

The cocking link is then fitted. It has to lay against the back of the trigger's intermediate sear bar, at just the right height to be able to engage the piston for cocking, yet fall away from the piston as the compression chamber is closed for firing. (Fig. 29). Fig. 30 shows the cocking link at a point where the sear has just engaged the piston.

The trigger guard is then machined, cold formed on a mandrel, and cut to length where it meets the grip. Once the trigger guard has been fitted and it's fastening pin driven into the frame, the trigger guard is then milled to its finished width of 7/16". A ball end cutter is used to form a fillet at each point where the trigger guard meets the frame. (Fig. 31 and Fig. 32).

Now it is time to tackle the latch mechanism. Having received prior warning that this little detail could be the cause of some frustration, I take my time and manage to get a working latch on the first try - but - while it works just fine, I am not satisfied with it. A second iteration of

the parts is made, making adjustments to the areas that I am not happy with, and the result is a smooth operating latch mechanism, with no slop or over-travel. (Fig. 33 and Fig. 34).

I chose to go with a press-fit plug to fill the front of the latch mechanism hole, rather than to fit a screw. (Fig. 35). Once the face of the plug is blended with the front face of the frame, the plug becomes pretty much invisible, and effectively mimics the blind hole shown on the 1910 patent drawings. (Fig. 36).

Last but not least, the fitting of the front sight. I chose to go with a press fit of the front sight element into the barrel slot, which results in a clean looking, and solid assembly. (Fig. 37).

The gun is then tested for functionality with a low



Figure 26

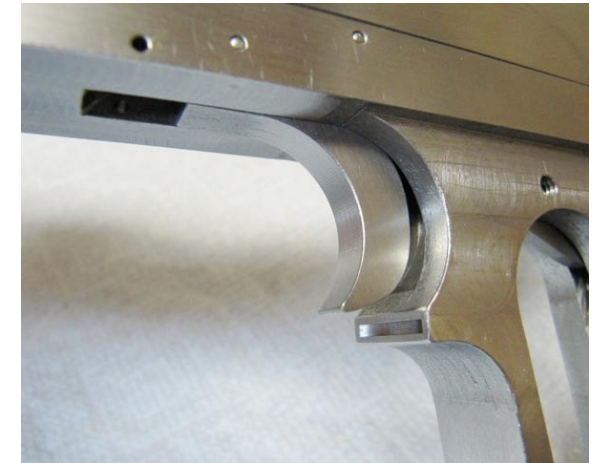


Figure 27



Figure 28



Figure 29



Figure 30

power mainspring, and everything is working great. Still much left to do though – harden those parts that require it, fit the proper, full power mainspring, disassemble and polish out all the machining marks, and finally, bluing. (Fig. 38).

One of the hurdles that I ran into is how to go about replicating the appropriate Webley markings on the side of the compression chamber. I do not have access to a pantograph, and not one of the many local trophy engravers were willing to even try cutting lettering in steel – even if I supplied the needed cutters. I was hesitant to try using an etching process due to my unfamiliarity with the chemicals and the process itself.

That left the option of perhaps purchasing a set of 1/16" letter stamps with a gang punch capable of doing each line of text in one blow, but that proves to be prohibitively expensive. That left but two options open to me – try buying a set of individual 1/16" letter punches and trying not to make a mess stamping one letter at a time, or just forgo the markings on the gun, and perhaps print the details on the lid of the storage box I intend to build for the gun. I decided on the latter.

The next obstacle I ran into is the bluing. I had hoped to have the gun hot-salts blued, but was unable to locate any shop locally willing to do the job. Also, I was not too keen on shipping the gun to some shop whose best estimate on turn-around time is "whenever we get enough guns to make a run worthwhile". As a result, I reluctantly decided to try bluing the gun myself using one of the cold blue formulas available. The cold

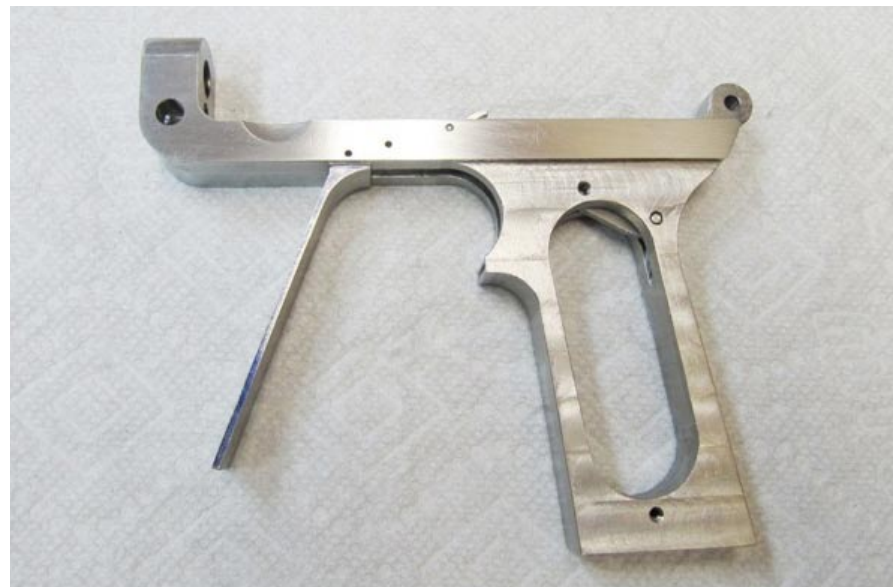


Figure 31



Figure 32

blue job finished up nicer than I had expected, but not as nice as I would have liked. (Fig. 39 and Fig. 40).

The grips have not been checkered at present. I am not yet satisfied with my checkering skills, and will not tackle these grips until I am confident that I will be able to do a job that I will be happy with.

Testing and Performance

The mainspring that I chose for my build is the center spring from the two spring set found in the Anschutz LG380 match air rifle, cut down to 37 coils. Initial testing with this mainspring is very encouraging, resulting in a ten shot average velocity of 299.24 FPS with JSB RS pellets (7.33 gr), for a muzzle energy of 1.46 FPE. The gun is then disassembled for bluing.

During re-assembly after the bluing, I burnished moly paste into certain key areas, in addition to the light oil that I used in my earlier, initial test. The piston seemed to slide much smoother than before, so I am wondering if any improvement might be realized in the gun's performance. After a few test shots to allow things to work in a bit, it is time to run a few shots over the chrony. Once again, I am pleasantly surprised. Using JSB RS pellets (7.33 gr), a ten shot average of 312.84 FPS is recorded, for a muzzle energy of 1.59 FPE. I decide to try some heavier pellets to see what the results might be.

Using JSB Exact Express pellets (7.9 gr), the ten shot average is 304.42 FPS, for a muzzle energy of 1.63 FPE. Next, I try the JSB Exact pellets (8.44 gr), and record a ten shot average of 293.35 FPS, and 1.61 FPE muzzle energy.



Figure 33



Figure 34



Figure 35



Figure 36



Figure 37



Figure 38

Due to the length of the barrel, the pistol is muzzle heavy, and this imbalance is exacerbated during the shot cycle, making the gun a bit of a challenge to shoot well. After plenty of practice shots, I decide to try shooting some targets.

The first target is shot at five yards, using JSB RS pellets, from a standing, offhand position, using a two hand hold. I am able to keep 10 shots within about a one inch +/- group, with the best of the targets shot at this distance measuring 0.937" CTC. (Fig. 41).

Next, I try

shooting a few targets at 10 yards, using the same pellets and shooting position as before. The 10 shot groups are now averaging around three inches, with the best target of the bunch measuring 2.687" CTC. (Fig. 42). I am certain that the gun is capable of doing much better at this distance, and perhaps I should have used a rest, but this target is much more indicative of what I can expect when I am shooting the gun from the position I am most accustomed to using.

To cock the Webley-Whiting, the technique that I use is as follows: While holding the gun in the right hand, the compression chamber latch release button is pushed in with the left thumb. Using the right thumb and forefinger placed in the respective indents on the sides of the compression chamber, the compression chamber is raised slightly until the left thumb can be used to briefly hold the compression chamber in position, allowing the right thumb and forefinger to be moved to the underside of the compression chamber for an improved grip to continue the cocking stroke.



Figure 39



Figure 40

Once the gun is cocked, the compression chamber can be lowered to allow the cocking link to drop away from the piston lug, which eliminates the potential

for a beartrap incident to occur while loading the pellet into the breech. Once the pellet is loaded, the compression chamber can be lowered until the compression

chamber latch engages. The gun is now ready to fire. The cocking effort is about the same as that required to cock a Webley Senior.

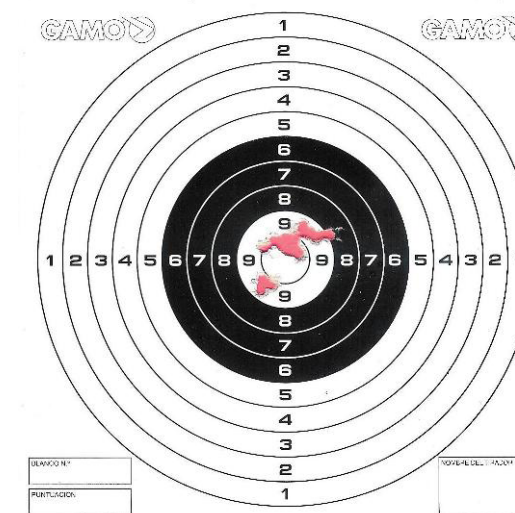


Figure 41

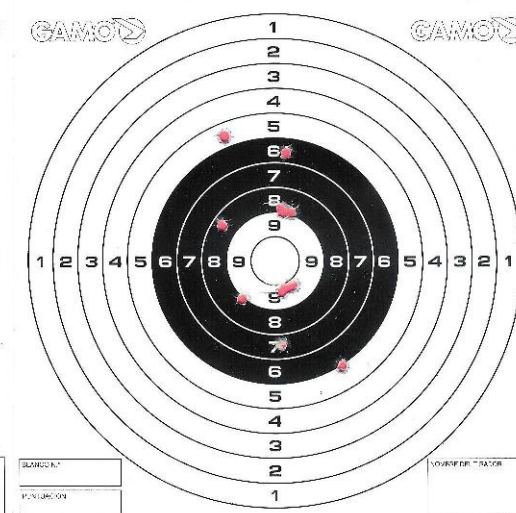


Figure 42

This has proven to be a challenging, yet enjoyable project with a very satisfying outcome. It is an excellent addition to my Webley airgun collection as well.

©Leonard Joe

Pistol with a gearbox

The Parker 'Precision' – a spring pistol with design features that echoed an earlier generation of crank-wound gallery rifles – was marketed against much less complex or expensive-to-build market opposition. Unsurprisingly, the Parker lost... Brian Uprichard explains why this pistol is so collectable.



The Parker 'Precision' (right side)

This is probably the quirkiest air pistol I own and certainly the most unwieldy even when compared with the similarly sized Westley Richards Highest Possible.

Although I'm familiar with crank-driven systems used in 19th century gallery guns, I would struggle to

think of any other more recently produced examples.

The pistol is officially designated as the 'Parker Patent Precision Rifled Air Pistol' sometimes referred to as the Parker-Hale Pistol which is not strictly correct although the company history is quite complex

and it is easy to see why this error may have occurred.

A.G. Parker was a rifleman in the 1st Battalion, Royal Warwickshire Regiment in 1880 and began supplying shooting aids to his fellow shooters which lead to a rapidly growing business when he formed a partnership with his nephew, A.T.C. Hale in 1904.

The new company was called A.G. Parker and Co Ltd and survived the difficult periods associated with two world wars and the Great Depression until the company was re-launched as Parker-Hale in 1936.

Design of the pistol dates from around 1920 and was the result of a design by Alfred Hale and Ernest Harris, with the associated provisional patent No 13011 being attributed to them in 1920. The full patent, No 166759, also from 1920, was applied for and accepted in 1921, but full protection was not granted with the patent for some reason being stamped "Void: Sealing Fee Not Paid".

The general layout of the pistol was somewhat influenced by the earlier Westley Richards Highest Possible Pistol design with a fixed barrel above the cylinder, but the cocking system was radically different from anything else other than the much earlier gallery pistols.

Instructions for cocking and loading the pistol were included on a label inside the box containing the pistol. The recommended method to cock the pistol was to grip the pistol firmly with your left hand with the butt of the pistol held against your body.

The cocking handle was then rotated clockwise for approximately 3-4 turns to compress the spring until the trigger sear engaged the piston and the crank became disengaged and hung loosely downwards.

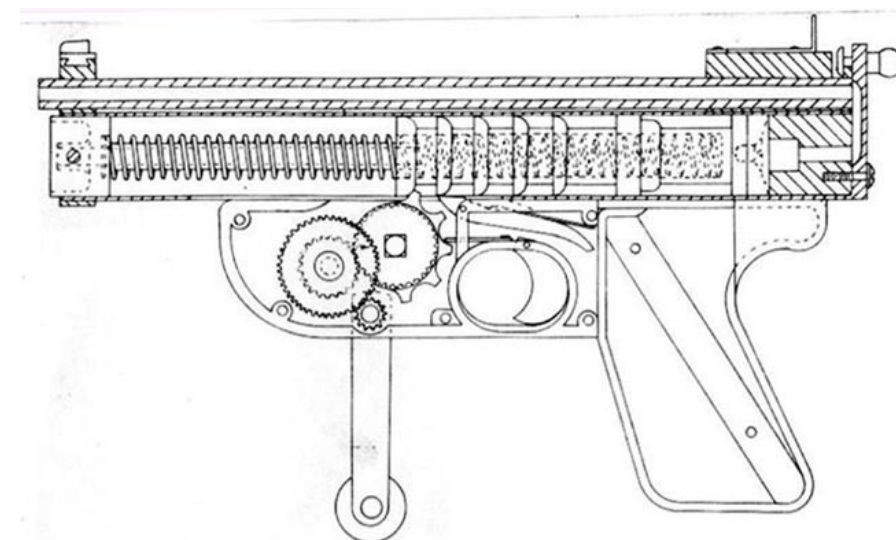
At this point the toothed gear wheel, which engages with the rack formed by annular grooves on the piston, has disengaged thus preventing the crank handle whirling back the pistol is fired.

To load a pellet, the large knurled screw at the back of the breech block needs to be slackened off a fraction of a turn to the right to release the pivoted loading gate, which is then free to swing downward. The .177 pellet is then loaded into the rifled barrel and is seated by a neat little pellet swage wire. You can either apply thumb pressure to the back of the wire at the top or rather more elaborately, gently pull the lower part of the wire towards you when the top end will nod forwards to push the pellet approximately 1/8 inch into the lands of barrel.

The pivoted loading gate is then returned to the upright position and locked into place by turning the breech screw head to seal the breech and the pistol is ready to fire. The pistol moves rearwards in this design compressing air before it in the cylinder. Unlike the earlier Highest Possible and later Warrior pistols, there is no leather sealing washer here to prevent air leakage. The Parker relies on a tight screw



The Parker 'Precision' (left side)

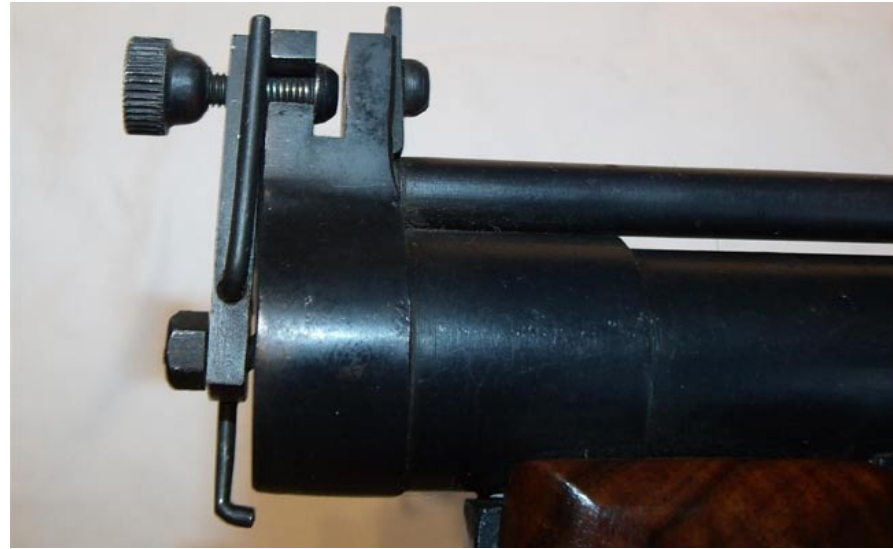


(117) Patent 166759 of 1920. Part Drawing.

Schematic from patent of 1920



The Parker 'Precision' (from below)



Breech cover (closed, from side)



Breech cover (open, with pellet swage wire inserted)



Breech cover (open, pellet swage wire removed)

closure of the metal-to-metal faces between the loading gate block and the breech face to prevent this happening.

Cocking and loading the Parker is a lengthy process and unlike the much earlier gallery pistols' fitted with removeable cranking handles, the permanently attached handle tends to get in the way once it has performed its purpose.

A.G. Parker would have been quite capable of manufacturing the complete pistol from their facilities in Whittall Street, Birmingham and

may even have rifled the barrels themselves, although it's probable this operation would have been sub-contracted to a firm specialising in smaller calibres.

The later pistols had a stepped diameter at the rear of the cylinder which is immediately evident when compared with earlier examples, the reason for which has not been fully established.

The sights are adjustable, although the rear-sight is elevation only and fore-sight can be drift adjusted for windage within its dovetails. The trigger is a single-stage unit, adjustment via a small screw in the trigger blade and accessed through a hole in the trigger guard. The instructions advise against too light a setting, as this could damage the piston due to minimal bearing surface contact.

The grips appear to be walnut and are very plain (the pistol shown has replacement grips), but adequately shaped to provide a reasonable if somewhat top-heavy hold. The crank rod on the first pistols was formed to clear the cylinder by more than half an inch. This was quickly replaced with a straight rod which was mechanically more efficient as the turning force would have been more direct, but unfortunately the handle block often fouled the cylinder, resulting in some minor marking to the blueing.

I tested the Parker using my favourite H&N Finale Match .177 pellets which weigh 7.5 grns producing an average muzzle velocity of 420 fps when put through the chronograph resulting in a muzzle energy of 2.95 ft lbs. This may seem a bit low for such a large pistol, but is perfectly adequate for the normally recommended ranges of 6 -10 yds. Accuracy was originally quoted to be 0.75 inches at 6 yds, but my best group at this range was nearer 1.5 inches and just under 2 inches at 10 yds. This was probably due to my infrequent use of the pistol and consequent unfamiliarity with its handling characteristics. As a matter of interest I tried inserting

the pellets without using the attached seater and found that the groups opened up considerably.

The Parker was produced between 1921 and 1926 during which time a total of less than 250 were made making them a very rare item with an associated high current value when they do come up for sale. I have seen a few examples offered at arms fairs and auctions etc ranging from £850 for a non-working example to £1,300 for a pistol in excellent condition. The Parker was originally sold for £4 in 1921 which was a great deal of money in those days and would have limited it to the upper end of the air pistol market.

A small number of the later produced pistols did not have the acid etching present on the earlier examples giving rise to a theory that they were not sold until after the war, using parts remaining when production ceased in 1926. This was certainly the case with Anson's Star air pistols where post-war examples were assembled and sold using pre-war parts by another company. However, etching might just have been seen as an unnecessary operation when running down original production at minimal cost.

The relatively high price and presumably fragile nature of the gear train probably led to the early demise of the Parker with the launch of the superb Webley Mk1 design in 1924 finally consigning it to history in 1926.

©Brian Uprichard



Cylinder front cap



Breech cover open (air transfer depressions visible)



Breech cover open (serial number stamping)



The Parker 'Precision' (front view)

Dainty Diana: a class act



Diana 17P: built at a time when manufacturing shortcuts came second to quality

This century-old production airgun is in exceptionally good original condition. Danny Garvin describes what makes a 'keeper' in his collection.

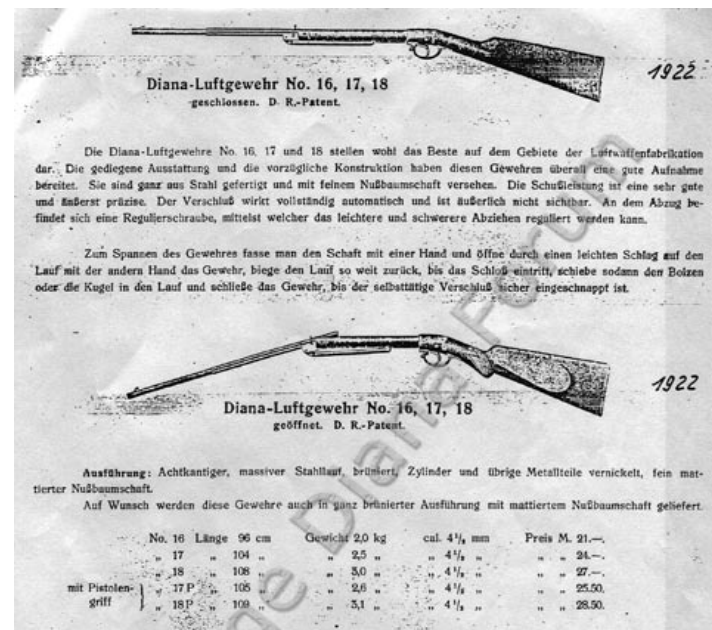
Every now and then an airgun collector finds a gun that touches a chord deep inside – and he decides he will never part with it. I've had many of these so-called 'keepers', yet over time the desire to hang on to them has

waned, and they've been moved on.

But there are a few that I've held onto through thick and thin. One such gun is a small pre-1914 MGR Diana long gun (smoothbore) that I've never seen

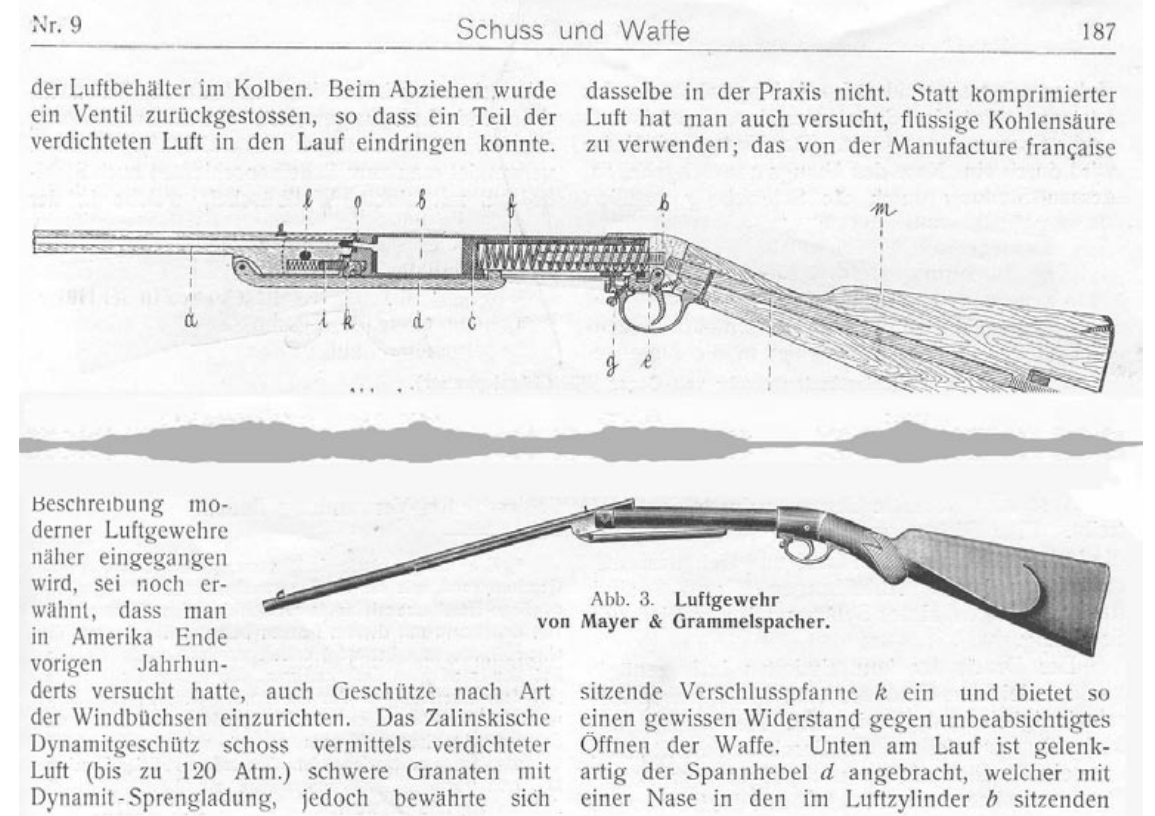
the likes of before or since. It's in exceptional condition and handling it is such a joy that it's impossible to conceive I'd ever let it go. Well, it seems that way to me now, anyway.

Identifying the correct model is not as easy as you



This compilation of early catalogue pages helps identify the gun as a 17P but the handwritten dates are clearly wrong

might expect. Few official references relating to pre-WW1 Dianas seem to survive. There are patent drawings that cover main developments, such as Jacob Mayer's famous break-barrel detent patent 7218 of 1905 (1904 in Germany), and there are a few contemporary German and British catalogues that carry Mayer & Grammelspacher airguns.



Schuss und Waffe from 1910: Illustrations but not much discussion

The gun seems to be a Diana 17P, according to a compilation of old Diana brochure pages put together and distributed widely by an enthusiast some years ago. I've heard conflicting stories about the origins of this bundle of pages and don't know where the truth lies.

There is what looks to be a reference to my Diana, which it identifies as a 17P (the 'P' for *pistolen griff* – pistol grip). But, confusingly because it is clearly a pre-WW1 gun, '1922' is handwritten on the page – an example of many errors in the annotations throughout this compilation.

At approximately 105.5cm long from muzzle to the tip of the butt and weighing about 2.7kg, it is definitely not the smaller 96cm model 16 or the larger 108cm model 18.

The airgun writer, John Atkins, points out that it appears in the Diana catalogue known as *Schiesse mit*

Luft!, which is undated but seems to be from around 1908.

An illustration is also found in *Schuss and Waffe*, which was published in February 1910.

Mr Atkins notes the gun is shown in the Albrecht Kind catalogue, dating from around 1912, with the designation no. 7602. It is advertised at 24 Marks.

A similar looking rifle appears in a 1913



The Albrecht Kind catalogue 1912 (with thanks to John Atkins and E. Groba)

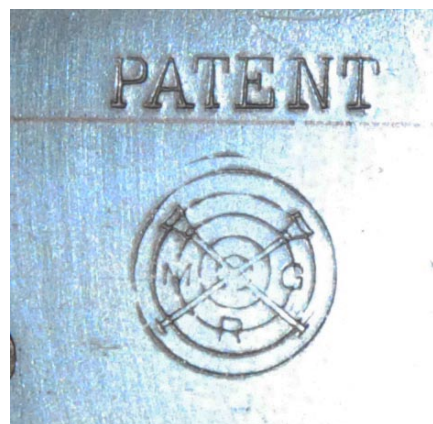


M&G's rubber-tipped dart pistol, as illustrated crossed on the target in the Alfa advertisement shown below. The darts formed part of M&G's logo

Diana advertisement, although the cylinder seems narrower, suggesting it may be a lighter model.

The Mayer & Grammelspacher markings changed before this gun was made, from the simple M G over R within a circle, to one that showed the concentric rings of a target, and the M, G, and R appeared in segments formed by crossed rubber-tipped darts – ones that were used in M&G's Eureka range of airguns aimed at young shooters.

The 1911 Alfa catalogue shows these darts, along with the new logo. The design was dropped after WW1 in favour of the Diana goddess, who discards her bow for a gun.



The breech markings

Judging by the scarcity of these late pre-WW1 Dianias, it would suggest that production didn't reach anything like the levels of the late 1920s and '30s, when many thousands of model 27 break barrels and smaller models were made, their numbers making them commonplace even today.

At the time the 17P was made, a



The 1911 Alfa catalogue shows the MGR target and darts logo

popular Diana rifle was the model 19, known in the UK as the Dolphin. An example of an 'Ansonia-type' Diana is known with the concentric circles/ rubber-tipped darts symbol and 'Manufactured in Germany' stamped on the breach.

It seems quite possible that Diana also built the very similar 'Ansonia', retailed by E Anson & Co in Birmingham. The historian John Walter suggests that Anson copied the M&G design rather than licensed it, but it's surely also plausible that the company simply purchased unmarked examples from Germany and rebadged them, perhaps after making 'improvements', such as rifling the barrels?

Before WW1, airguns not classified as toys were made in much the same way that guns had always been made – with top quality materials and a lot of hand finishing. If you compare the Lincoln and BSA rifles made before

the Great War with those made after it, you can see small economies, like stamped instead of cast trigger guards, have crept in, marking out different eras of manufacturing quality.

The 17P is firmly of the former era, with a massive trigger block curved in every plane; a profile that must have taken considerable effort to perfect. Quite a contrast with the slab-sided trigger blocks of the ubiquitous butt-



The grip chequering is superior

stock Diana 27s of the 1920s and '30s. The beautiful cast trigger guard on the 17P makes the stamped guards of the post-WW1 Dianias look cheap and crude by comparison.

The hand chequering on the pistol grip of the walnut stock is another mark of quality.

One of the reasons I am so fond of this gun is the remarkable condition of its original finish. I can only guess at how it has survived for more than a century in this state, but it seems likely it was tucked away in a cupboard or trunk, protected from damp and light across the decades. The lack of use or abuse and almost 'as new' appearance brings you close to an age



The Diana marking is deep and even without signs of wear

when you could have gone into a gun shop and picked it off the rack to be parcelled up by the shop assistant.

Will I ever sell it? Never say never, but I just can't see it happening. I suppose I may wake up one day with my airgun collector's soul having departed. Until that day, it stays with me, its current custodian —

and I promise to take good care of it.

©Danny Garvin



The adjustable gate rear sight may have been installed as an upgrade



The trigger block and guard show no sign of manufacturing economies

Romance of the Carbona

A Giffard enthusiast writes... Some people like to own these guns as pure collectables, to admire their superb workmanship and to own a slice of airgunning history. It was the first commercially-produced CO2 rifle and arguably the brand that spawned the type of airguns with small disposable CO2 cartridges – like those now found in the bedrooms of a million youths keen to play war, emulate their screen heroes, or just plain enjoy the plinking pleasure of CO2. Others like to shoot their Giffards and, as this account shows, it can be very addictive sport, 100+ years on.



A 'match' version of the Giffard CO2 rifle (photo courtesy of B McKenzie)

My first experience with a Giffard "gun" (actually, with the exception of the garden gun, all Giffard carbon dioxide arms were rifled) was in a small village in Derbyshire. I was the guest of my friend and his wife, and had a chance to view his interesting collection of all sorts of things. There were clocks, musical boxes, a well-restored player piano and of course airguns. He was a very special person who had seen and owned many guns in his life, and who was never happier when he was sat by a good fire, and explaining how various things worked.

Mr friend had a Giffard, a rifle of 6mm or 8mm and upon looking at it I must confess I was largely unmoved. It looked too fragile and skinny to withstand much use, and although fantastically decorated with rococo engraving and had a beautifully designed butt plate in cast ebonite, it did not appeal. Definitely not a real "man's weapon" I thought at the time, and with the price tag he valued it at, I thought something for the wealthy dilettante's gun cabinet, to be taken out and admired periodically, with tea and scones. Of course it was not working.

I have been collecting long enough to understand, or at least not be surprised at what happened next. I wanted one! I'm not quite sure just how it happened, but my mind got to work and I began to realise that Giffard had taken the principle of the pneumatic gun – as evidenced in the air cane – and applied it to a beautifully made and efficient rifle. There is no doubt that the constant need for pumping the reservoirs of old pneumatic arms was a serious draw-back, with its inefficient losses due to thermal effects, and the ever-present thoughts of disastrous explosions. Carbon dioxide, however,



Giffard CO2 rifles had a precision adjustable rear sight, shotguns had a simple blade (photo courtesy of B McKenzie)

present in the robust forged steel reservoir of a Giffard Gun (or cartouche) presented a number of advantages. The most obvious of which being such systems are (at constant temperature) at constant pressure, and a pressure of around 800-900 psi at the sorts of temperatures normally met with. This meant that shots could be fired at pretty well constant velocity until the last of the liquid carbon dioxide had evaporated. Curiously, detractors of carbon dioxide arms criticise this pressure as "low" but there is not a man living who could have hand-pumped a reservoir much above 600 p.s.i. with the apparatus available at the time, and a Giffard Gun must have seemed little short of miraculous.

I liked the science involved, and the link Giffard's invention made

between the air cane and the modern spring air rifle. I had to have one, expensive though they were. I was not expecting what was to happen next, however. It was late December 2014, and a Giffard which was unsold at a well-known auction house was available at £700 (plus the extras). It was agreed that this was a reasonable sum, and this lot became mine on the 24th December. To be honest, I hardly knew what I was buying, but the condition was good, and the price right.

When the weapon arrived I was keen to get to work and see what was needed to be done in order to understand how it worked. Upon cocking the hammer, and firing, I was astonished to hear the unmistakable "chuff" of gas coming out of the barrel at considerable velocity. All seemed to be well, but

after repeating this action four or five times, my new Giffard died in my arms. This was the point at which I started to study the mechanism and how to put it all back to working order. The problems I had, the various solutions and knowledge gained will now be set out in approximately chronological order.

The first difficulty I had was to remove the cartouche from the gun. I had no spanner, and this was definitely no casual job for the mole grips. A little heating with a hot air gun (being careful to avoid the wood) was all that was needed, however, and I felt I had made a start. Cartouche spanners were available when these guns were new, and probably a light-weight job in aluminium would be a useful tool to have remade today.



The 'match' Giffard rear sight could be moved along a rail to adjust eye relief (photo courtesy of B McKenzie)



The most common CO2 Giffards used a bolt breech loading system (photo courtesy of B McKenzie)

The cartouche was clearly gas-tight, and my thoughts turned towards filling it, and accordingly my good engineer friend was given the task. He made a screw in filling plug which had a 'Daystate' fitting, and it became possible to pump air into the cartouche and confirm that it worked well when reattached to the gun. A Lee mould of .319" made ball of 8.1mm, and this seemed like close enough for a trial. I had NOT realised that the garden gun's barrel was choke-bored, so although these balls just about fitted the breech, they would have to slim down quite a bit if they were to be extruded from the end of the barrel. The best part of 1000 psi is, however, a very persuasive force, and the gun performed amazingly well.

With more reading, and a real example to study, I soon realised that the gun I had was a valuable addition to any collection, but not one to have in isolation. I was really attracted to the 'baby' of the range, the 4.5mm (often incorrectly called .177) and wasted no time in locating one. It became clear to me during my search that this calibre is rather rare, the 6mm and 8mm 'fusils' being by far the most common. Locate one I did, however, and on the 30th January it arrived from France, and provided me with another set of challenges and a growing infatuation with these wonderful old guns.

The 4.5mm was stripped of its original blue, but the engraving was

still very pleasant, and I was well pleased. The cartouche was solidly locked onto the gun, and at this point I had a robust spanner made of steel which has been a useful tool for all subsequent purchases. This cartouche did NOT hold air, but curiously by introducing a little paraffin, and baking in an oven at around 100°C it was rejuvenated for a while, and allowed me to try out the little 4.5mm. Well! For its trifling report (more of a short snap) it was amazingly powerful with the ammunition I had, and I was in for quite a surprise as I tried it out on a tin can (foolishly) in my bedroom. The can did not seem to have been hit at the first shot, so I tried several more. The can did not move, but closer inspection showed that it had been pierced right through with such ease since the comparatively large inertia offered by such an object was sufficient to keep it rigid when attacked by such a small projectile travelling at such a speed. A neat row of tiny holes were found in the plaster wall behind. Whoops!

Now the fever deepened, and well-meaning but irresponsible collector friends goaded me on, and I found myself trying to justify an investment in a pistol. Giffard pistols are serious rarities, and I began to question my sanity as I became sucked into the negotiations that led to the purchase of one of these from a website in Germany. I will blame the break up of an important relationship, the recovery from

cancer, and a heavy cold for the lack of restraint, but the purchase came about, and the loveliest item to add to my collection arrived at 07.50 on 7th of February. It filled my heart with many emotions; excitement, of course and also guilt at having spent so much money (a little under £2000). I was also concerned that my collecting was getting out of control, and this too was a worry.

Described as a 4.5mm, the 'pistolet' was actually 6mm and had clearly seen a bit of life. It was such a dandy thing to own, though, and so obviously complemented the long arms that it was hard not to be delighted with it. Subsequent bleaching and re-finishing of the wooden grips has made it look far more presentable, and I will probably re-blue the cartouche at some stage.

The pistol cartouche was easily removed, and the cap also was free, giving me a chance to inspect the valve mechanism and attempt to restore it. My attempts were largely unsuccessful, and without a lathe I could not cut a valve washer that would work; at this point the work on cartouches really began. Later on, I was to receive a lot of guidance from another collector-restorer, but I pursued my own ideas pretty much at this stage.

The valve washer was made of hard rubber, but just how hard it had been originally I could not tell. It did

however bear the imprint of the valve plate, so it must have been a bit impressionable. I thought nylon was a good substitute, and had a washer made. Initially this did not seal well, but with a few good snaps at high pressure it soon got used to the work expected of it. A friend let me have some 6mm ball. It was possible to try it out several times and I experienced the continued joy of Giffard ownership. It was amazingly powerful, but hardly 'sans bruit' (noiseless) as the contemporary literature claimed. I loved it! The next month would see the acquisition of an 8mm rifle and not long thereafter two 6mm rifles, and the indulgence of another pistolet, this time in 4.5mm. Things were going from bad to worse financially but clearly the end was in sight, and with the notable exception of a London made Giffard (of which more later) I have not gone wrong again, since.

Now my attention shifted to the problem of filling the cartouches with carbon dioxide. The air system was a valid first attempt, since it allowed me to check the valve mechanism, and the gun overall. Air contains moisture, and does not

allow the main advantages of the Giffard system to come into play, but at least it got me started.

I scouted around for a source of carbon dioxide. Airsoft guns use this, and of course there were the small and large 'soda syphon' cartridges, but all were expensive, and would need some form of adapter to connect to the cartouche. A better option seemed to be regular gas cylinders; the sort of thing the brewing industry use, but then there was the problem of paying rent on the cylinder, and having it charged from time to time, and there was nowhere local that this could be done. By the greatest good fortune, the day I had the idea of using gas from carbon dioxide fire extinguishers that had gone past their useful service, I actually walked past a van which was servicing a local restaurant, and had six inside. A deal was done, and I was all set for the next stage of my Giffard adventure.

I designed a filler adapter that used the threaded nut that originally carried the horn, a brass T-tube used in pneumatic control systems and an 8mm gas cock. This adapter also

carried a Daystate fitting so that my existing air filling plugs still worked. When this device was set up, putting gas into cartouches was a quick and easy operation, so long as you did not want too much to go in. A quick fill (inverting the extinguisher so that liquid carbon dioxide would be encouraged to enter first) would allow the gun to fire around 20 times. The difference with the carbon dioxide was quite thrilling! A rather heavier report, and a fine plume of grey vapour made these old guns look very impressive.

I could not leave it there, however. The original literature claimed that 6mm and 8 mm guns would fire 100 shots on full power, using one gramme per shot, and the weight numbers stamped on each cartouche confirmed that they should be able to hold 100 grammes of 'acide carbonique'. How was this supposed to be achieved? It became clear to me that no one that I had talked to had ever bothered to weigh their cartouches during filling, and I was the only person I knew who was looking to achieve the full original performance. The next quest began.

Cooling the cartouches in the



The 'match' version of the Giffards have an elaborate trigger guard (photo courtesy of B McKenzie)



The beautiful and fragile Giffard butt plate

freezer had been referred to by several people I chatted to, and was mentioned in one of the Cardews' excellent books, and was clearly the next step. How easy this was for us now in 2015 compared to 100 or more years ago! About 15 minutes ensured that when removed, the cartouche acquired a coating of frost, and now, when the carbon dioxide was squirted in, the valve made its characteristic 'creaking sound' for longer, and the frost could be seen to clear as the compressed gas warmed it up. The last little bit of frost, however, stayed – indicating, I thought at the time – the level of

liquid. Far more gas went in this time, but still a long way short of the prized 100 grammes.

Why it took me so long to try the obvious experiment, I don't know, but repeating the operation as described above went on adding liquid carbon dioxide, as it obviously would. Each time the cartouche is filled, the compression of the gas warms the system up, increasing the pressure until no more liquid enters. Cooling again allows the whole process to start again, and in a stepwise manner, more and more can be added. It was at this stage of my understanding I was confronted with a baffling problem that was to take much time to solve, and require calculations to be done. The problem was that cartouches when filled as much as possible fired weakly, or sometimes not at all. The frost line, observed during filling seemed to show a liquid level of around half to three quarters full. This, as it turned out, was misleading. A cartouche that was 'valve-locked' at room temperature could be made to work – sometimes spectacularly – at freezer temperature. What was

happening?

A digital balance, purchased shortly after, confirmed the mass of the carbon dioxide inside the cartouche, but the volume had never been considered. Now was the time for some proper logical thought, with the experiments suggested done carefully, with the results fully evaluated. An earlier observation of pressure measured in, admittedly a rather ad hoc manner (pumping once with the Hill air pump, and looking at the gauge) seemed to show a pressure in excess of 1200 psi.

Curious to say the least!

Using the mass and external volume of cartouche 50235 it is a straightforward matter of making a good estimate of the internal volume. This came out at around 112 cubic centimetres (a follow up check filling a cartouche with water and weighing gave a more accurate value of 110). The density of liquid carbon dioxide quoted to be 0.77 grammes per cubic centimetre, with no temperature mentioned. A mass of 100 grammes is therefore 130 cubic centimetres – 18 cubic centimetres larger than the volume available to accommodate it! Clearly there are errors involved here; but what is shown without doubt, is a full cartouche will be completely full of liquid carbon dioxide. There is no room anything else; because any residual air in an 'empty' cartouche would not liquefy under the conditions involved, but occupy a progressively smaller volume at a ever increasing pressure. Two things become apparent:

- A pressure far higher than the hammer could knock open could occur.
- Such a pressure would progressively inhibit further filling.

As an example: If an air-filled cartouche of volume 110 cubic centimetres is filled with liquid CO₂ to a volume of 109 cubic centimetres (84 grammes) the air will find itself in a volume of 1 cubic centimetre.



Giffard's balloon logo

This alone would produce a pressure rise to 1270 psi. Probably this would not occur in practice since before this could happen, no more liquid carbon dioxide could enter, due to the high pressure developing in the cartouche. It is quite possible, however, that at the low temperature of the freezer, a small volume of air inside a cartouche would exert a pressure high enough at room temperature to cause valve lock. This is what I think was happening. The cure was simple: purging.

After a fill of around 20 grammes, using my air filling plug inserted with a purging adapter between it and the valve (a stout piece of brass tube thin enough to contact the valve disc, with holes in the side) and screwing the plug in until gas was slowly being released, and with the cartouche upright, allowed the heavy carbon dioxide to displace or purge out the air. In theory, this would only need to be done when a cartouche was to be filled from 'empty' – but that was just what I often did, since I was constantly interested in the strength of the return spring. One experiment conducted on cartouche 38788 (supplied with the 8mm fusil) on 23rd October 2015 confirmed this spectacularly. 93 grammes of CO₂ were introduced, and the cartouche fired normally at room temperature. Subsequent good fillings have never produced valve-lock. The original literature states: [The cartouches] "sont charges de 105 grammes de gaz liquefie et, purges de 5 grammes" (p.5 *Nouvelle Balistique*)



The factory location was picked out in gold – a nice touch

Before I realised about the importance of purging, I was looking for the answer elsewhere, and was interested in the effect of weaker return springs in the cartouche, valve washers of different thickness and materials, and means of strengthening the blow of the hammer. To summarise the results of these experiments I will say the following:

- With a brass wedge placed above the trigger spring screw and beneath the mainspring, it is possible to strengthen the hammer blow, and should a cartouche be at a higher pressure due to entrapped air, it is possible to knock open a valve, but to no useful purpose, since at the proper pressure this is not needed, can never be relied upon work at all anomalously high pressures, and is a strain upon the spring.
- A weak (home made) spring was substituted for the rather strong original return spring. Comparisons with the same cartouche (23908 originally supplied with the 6mm fusil) show no difference with fire power (the test being significant ball breaking or bursting against the iron target at 6 yards) There may

be an advantage in filling with the weaker spring, but this has not been definitely confirmed.

- Although I prefer the harder nylon valve washers to polyurethane ones, because they will offer a more rapid opening as the valve disc is struck off, due to less resilience, I cannot honestly confirm a better performance. The ease of fitting polyurethane ones which don't leak and don't need especially well ground valve discs probably recommends them over all other type of material.
- The thickness of the valve washer is important to some extent. Study of the firing pin and hammer mechanism shows that if the washer is too thick, the valve plate will be held too far away from the end of the cartouche, and the firing pin will not be able to reach it without there being lost motion between it and the hammer. This may not affect power, since the full blow of the hammer will be transmitted – but it is sloppy and to be avoided. If the reverse obtains, the firing pin will be pushed out towards the hammer too much, and only a fraction of its blow will be



Cartouches were often damaged due to tightening with the wrong spanners

delivered; resulting in lower power. If the valve is right, the hammer is pushed back only slightly when cartouches are attached.

Regarding the regulation of power – an amazing bit of ingenuity on the part of the designer – there are just a few things to say. The milled (and on early examples knurled) knob in line with the barrel axis is designed to act as a stop to the hammer, limiting its blow, and hence determining how far open the cartouche valve is struck, and thence the amount of gas escaping to propel the ball. It is held in place by the semi-rotary breech bolt; a fact not known to me initially, and I suspect to scores of previous owners. At the end of the threaded stem was originally a section of copper plug which forced its way into the threads of the regulating knob, acting as a break. Most of my Giffard Guns had freely rotating power knobs, having lost the

copper plugs years ago.

The power can be beautifully regulated from zero, or 'safe' to 'pea shooter' and then to 'cannon' and the useful range is contained within one and a half turns in the guns I own. What I did was this. Undoing the power knob till almost in contact with the hammer, I screwed it back in until firing just gave a small amount of gas, audible above the plain metallic click of the mechanism. I called this the 'chuff' point. I then loaded the gun, and determined the position of the knob needed to just express the ball. (This often had to be done in stages, since a ball would not come out and needed to be removed with more power, and the adjustment started again but with the knob in a bit more) In the case of my guns, the balls were just expressed at the following points:

- 4.5mm: 6.50 turns out from fully closed

- 6mm: 7.25 turns out from fully closed

- 8mm: 5.50 turns out from fully closed

I called this the 'point of minimum power', the ball in each case receiving just a small flat on striking an iron target 6 yards away. 1.75 turns back in, in increments of 0.25 turns, took me to what I considered was full power as shown by an ever increasing diameter of the shot balls, until fragmentation occurred. I called this the 'point of significant ball breaking'. As a sort of control, I wound the knob back out again, in the same increments, and was rewarded with the remarkably similar display illustrated below. Correlating the power to rear sight adjustment for a given distance would be another experiment, but that will be for another day.

On the 15th September 2015, I 'went wrong' again, and having seen the

'London Giffard Gun' advertised as being one of the lots (998) in the Anderson & Garland sale of the David Swan collection in Newcastle-upon-Tyne, I determined to have a go and buy it. Accordingly, I flew to that city, viewed the lot in a very restricted manner, promptly fell in love with it, and bid at the appropriate time. I had sold a rather valuable phonograph, and had funds in the event of it reaching the £1,700 price tag that it sold for just a few years previously. Gloriously, it made a little over half that, and I doubt if anyone could be happier that day as I attempted to sleep in the cheap (if rather inadequate) youth hostel that I had booked, with my trophy by my side. A great adventure I will remember all my life.

From a technical point of view, the 'London Giffard Gun' is very similar indeed to its French forebears, but with the greatest respect, the description that I had read in L. Wesley's fantastic book: *Airguns and Air Pistols*, one of my favourite books, is not entirely accurate and I'd like to put the record as straight as I can.

Wesley notes towards the beginning of the book that London Giffards are more common than the French variety. They might have been in England in the 1950s when he was writing, but I doubt it, considering how briefly they were made. Even if they were then, they are clearly not now. A curious slip. He describes them as "most beautifully made" on page 84 of the 6th edition, yet loving 5118 as I do, I would consider the workmanship of at best equal to the French made carbonas,

and with vastly inferior engraving. The cartouche too, is very plain by comparison. On the same page, Wesley describes them as: "not a commercial success" and gives the reason as "the impossibility of keeping the valve airtight" He then goes on to explain this false premise by claiming that they work in a different way to the French guns, which he calls the "rebounding lock principle" but fails to explain what he means, other than to say it is different from that used in air canes.

Perhaps there are other types of valve that exist in other London Giffard Guns, but I can confirm that although of a different shape and style, the valve is knocked open by an (internal) hammer, the force being transmitted via a (very much stouter) firing pin, and to this date mine has never leaked, despite requiring no attention from me. That the valve closely resembles that of a mid-Victorian air cane is a further source of delight, since this was the very link that had made the Giffard so intensely interesting to my mind.

It is interesting to conjecture why Paul Giffard came to London, from his native France, and that he did so as an elderly man – to die a few years later. We may wonder if he felt he had lost control of his invention to the mighty organisation of 'Manufacture Francais d'Armes et Cycles de Saint. Etienne' and wanted to try out new ideas which would not warrant re-tooling in France. In all likelihood Giffard was a rich man, and we know that his fertile mind had been obsessed with pneumatic machines for over 50 years. Assuming that he had not 'lost his

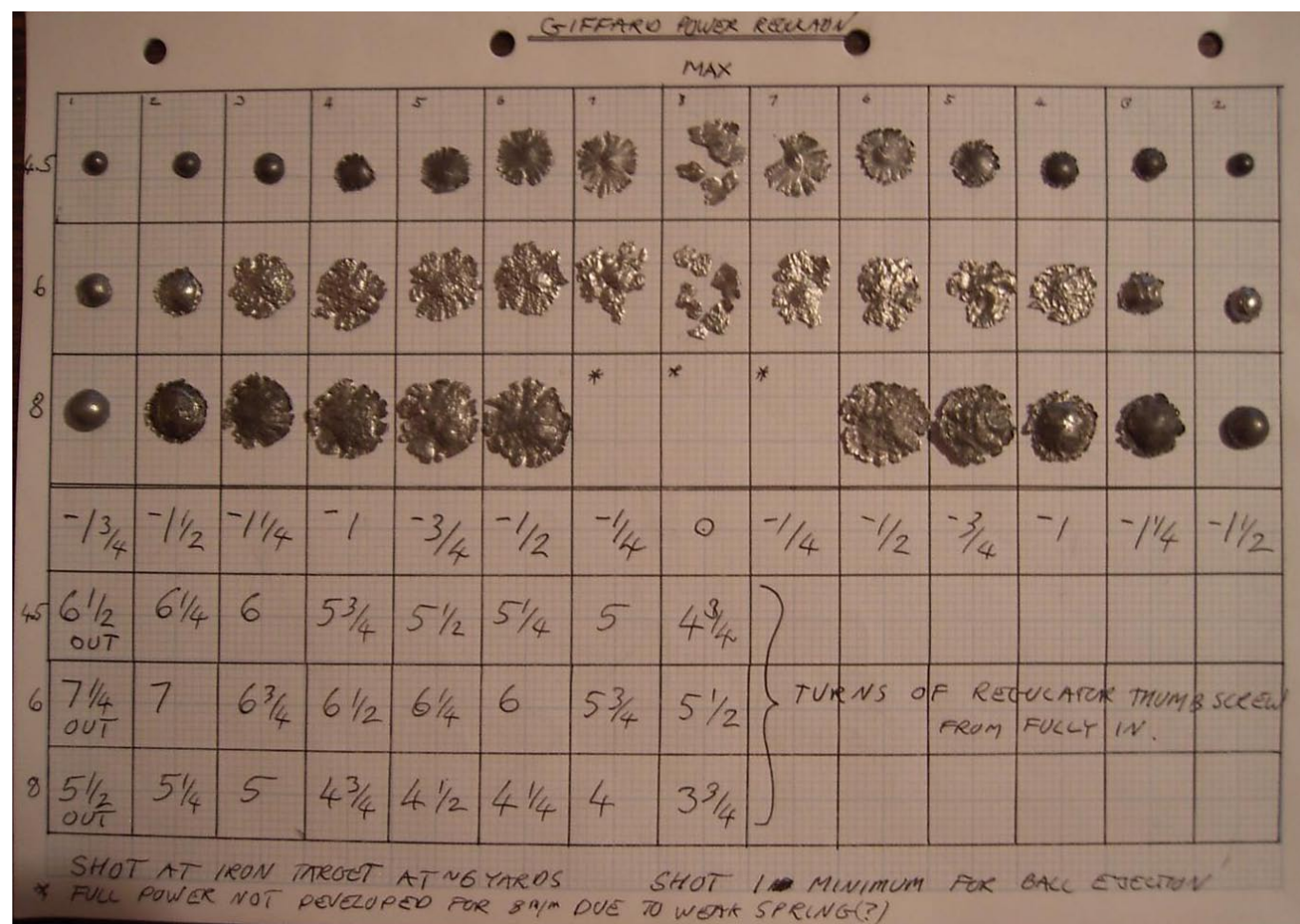
way' in later life, the London Gun would contain improvements that he thought were important, unless there were compelling financial or personal issues that were behind the design.

I find it touching that even at the end of his life he was still striving to perfect a weapon that much of the world had turned its back on, and imagine the upheaval of re-locating and setting up anew as an old man, in a foreign country. His fusil carbona must have been his last love, and the London model would embody his latest ideas; or would it just be the best the factory could manage under the constraints that were put upon it? Was it even a sort of vanity project?

Looking at a London Giffard Gun today, it is a thing of great beauty and ingenuity. It is also rather eccentric. Let us consider the main differences and theorise what brought them about. A conical bullet was a departure from the more usual ball of the French guns, and what a bullet it was, being half an inch long and .295 inches in diameter, weighing around a whopping 75 grains! Possibly balls looked old fashioned, and this was the reason. Maybe a range of guns was planned, and smaller bullets and target sights were to be available – and maybe they were. I don't have the information. Conical bullets explains the need for a breech that opens parallel to the barrel axis, but what of the trigger guard cocking? Had Giffard been a fan of the Winchester repeating rifle? If so, it is clear why the design was chosen, but in all



Giffard set up in London and produced this CO2 rifle. An under lever opened the breech loading port



The author's power regulation chart

honesty, with no bullet magazine so loading remains a two handed operation, the rather delicate lever provided seems to offer little if any advantage. The feature of a "safety" was probably a modern influence, and this is very positive and works well in conjunction with the loading operation, and maybe with excellent eyesight one can actually read the minuscule numbers in the shots counter. Mine has provision for 200 shots (Wesley claims 100) yet at one gramme of gas per shot, my cartouche could only fire 100 times. This begs the question: were longer cartouches available? There is no obvious method of adjusting the power to, say, half a gramme per shot – except slackening off the screw holding the mainspring should, and in fact does, effect a reduction in power. Whether or not this was a deliberate feature I do not know.

Lastly, we come to the valve. I cannot imagine why the much

larger air cane type valve, was used. With space in the cartouche at a premium, and with all the simplicity of the French 'soupape' (valve), why change things? Was it that despite claims of perfection, the vulcanised rubber of the original valve washers were unreliable?

And finally, to return to the original French Giffard, what about the mystery of the 4.5 mm range? What I mean is they were clearly an after-thought, not being mentioned in the famous 1890s treatise and both my rifle and pistol have an abnormally large breach of around 8mm, abnormal when you consider the small size of the ball used, and even more odd is the clear evidence of a smaller tube bearing the rifling having been let in to a larger diameter hole – of about 8mm – I think it is pretty clear that both my 4.5mm guns started life as 8mm, possibly unsold items that were rebranded (to use the modern idiom) as 'target weapons'. Were any

4.5mm arms purpose made, with small breaches commensurate with these tiny balls? I'd love to know.

What is clear though, is that the guns made using Paul Giffard's wonderful 'nouvelle balistique' do exactly what is claimed of them (even if they are a bit noisy) and have fully rewarded the time, effort and money I have expended in acquiring them, and putting them back to work. I am proud of the results of the experiments I have done and cherish the lovely examples that I am fortunate to look after. ■

Disclaimer: If you shoot a Giffard CO2 rifle, take care that you do so safely and that you operate within the law. The publisher takes no responsibility if accidents or illegality occur.

Sliding breech revolution

Scientist Alistair McClure applies his nearly 40 years of experience of shooting and taking apart airguns, ruminating on the sliding breech and its pros and cons. Why it took airgun designers so long to put the pattern to use is a mystery, because as match air rifles from the 1960s and the Weihrauch HW77 from the 1980s proved, a well-made 'slider' is a world beater.



Weihrauch HW77k in Venom stock

The first sliding-breech rifle I was aware of was the Chinese 'Lion', a thing akin in looks to an SKS military rifle. There was a test on it in Airgun World, and it was not the sliding breech that I was taken by, but the fact it was a 'powerful' .177. I think I was 14 or so, and any .177 over 10 fpe interested me. At some point I rang Manchester Air Guns and asked them about it; they said they had one in stock but that they would not recommend it. Such honesty, and if my experiences with the very similar DB4 decades later, completely correct. In any case, the Lion didn't have a scope ramp on it and that

pretty much disqualified it for me as I wanted accuracy at range.

The next 'slider' I saw could not have been more different. Someone at the Tetsworth Field Target club had got lucky at a police auction and had bought a Venom HW77 for a song. It was booty from a court case in which a very spoiled child had been given the rifle and had consequently used it to take out all the chimney pots in the neighbourhood. It was extraordinary; the high-combed walnut stock, the almost effortless cocking, the way that it didn't recoil more than a nudge and most

especially the way it just slapped the furthest knock-down over shot after shot. And it was a .22!

Field target in those days was exactly that, a field full of targets, the furthest one 45 yards distant. My interest in airguns was just drifting off at that time. I had been chasing the Holy Grail of a match-accurate, consistent air rifle and had given up; when I actually had one in my hands I didn't have the passion any more to get one. I'd owned a tap-loading Hammerli which was very accurate but lacked power, an Anschütz 335 which I (incorrectly)



Feinwerkbau 150 match air rifle

suspected of barrel-wobble, another disappointing tap-loader in the form of an Original 50T01 which cost me a whole summer's work.

In the end I settled for a battered old HW35 Export which was surprisingly accurate and a pleasure to shoot. I was always getting 'underdog' rifles out of some kind of perverse sentiment that I could never really put my finger on. I was the same with motorcycles, wanting to get the 'unusual' rarer model which are almost always expensive and have some kind of problem with them. Luckily, I could not afford the Moto Morini 350 with its dodgy electrics and poor finish, and finally saw the reason that a Honda 250RS was a popular bike was because it is a GOOD bike. Like the Honda, the HW35 has been a perennial favourite

all over the world because it is a GOOD air rifle. Rare and unpopular models are rare and unpopular for a reason!

Fast forward to middle age and I revolve back to the sport of my youth. I am interested in the same thing, a super-accurate air rifle, spring piston of course. I get the top accurate rifle of my time, the break-barrel Feinwerkbau Sport, it prints very small groups at the small-bore club range, but I just don't really like it. Finally, I get a sliding-breech HW77K, fit a Venom kit – and there we are. It shoots tiny wee groups, it is a dream-gun! Why had no-one ever thought to make a rifle in this configuration before? And I saw in the magazines there was now an refined 'copy' of the 77, the Air Arms TX200, which was outselling all other

air rifles. I was quite annoyed and upset that this development came a few years too late for me to use in my teenage years.

The odd thing is, as evidenced by the Chinese Lion, the idea had been around for a long, long time. When I was young, I didn't really think about HOW rifles produced accuracy, there were just accurate rifles and less accurate rifles. I knew about the barrel wobble problems which plagued break-barrel Webleys, and formed a prejudice against them. In spite of the possibility that a breech could lock up in exactly the same point for thousands and thousands of shots, I just didn't like the idea of it. Like rear-wheel drive cars, I don't like the idea of them either. This had led me to consider the heavier, more expensive fixed barrel rifles.

The problem was, the fixed-barrel rifles weren't more accurate. For example, the Original 50 has a fixed barrel, so according to my thinking, it should be more accurate as the scope and the barrel are locked together, whereas there is always theoretically a minute amount of variation in the alignment of the barrel and the scope with the break action. However,



The HW77's sliding breech

in real comparative tests, it was seen that for the most part break-barrels were more accurate than the fixed barrels when using a scope. The Original 35S was more accurate than the Original 50, the BSF S70 was more accurate than the BSF S54, the BSA Mercury was more accurate than the BSA Airsporter. The difference was often more than marginal; the comparisons should have shown the reverse. The Feinwerkbau Sport and the HW35 break-barrels were amongst the most powerful as well as the most accurate sporting rifles. The Hammerli I bought at first was as accurate as them, but was 3 to 4 fpe weaker, a distinct disadvantage at ranges over 30 yards. The Original 50T01, one of the most expensive sporting air rifles of the time, could not match the accuracy of its cheaper break-barrel stablemate the 45.

What was going wrong? I think it is all down to the method of loading the pellet. For some reason, probably dating back to BSA's decision to make fixed-barrel rifles, nearly all fixed-barrel rifles were loaded by a bored-through drum called a 'loading tap'. According to BSA lore, the best BSA tap loaders were those which had their taps fitted by specialist gas-tap experts from a nearby engineering firm that specialised in gas piping. This gives a clue; the fit of the tap is crucial to the success of the system. If it is not done perfectly, inaccuracy will result. Thus it is not really the right type of system for a rifle made using mass-production methods down to a price.

If the bore of the pellet and the bore of the barrel are mis-aligned even slightly then inaccuracy results; there is



Breech of an Anschutz LG380

also the issue of the pellet 'jumping' into the lands of the rifling in the bore from the smooth tap, another possible source of inconsistency. The long transfer port and additional dead space in the system always meant the tap loaders trailed the break-barrels in power as well as accuracy. Strangely, BSA had a patent for a 'roller breech' which allows direct loading of a pellet into the bore but it was not used on a production rifle for nearly 80 years; perhaps there were issues with sealing it, as 'O' rings had yet to be invented.

As well as allowing solid orientation between a scope and the bore, the sliding breech allows direct loading

of the pellet into the bore, and it also allows a shortish transfer port and a good seal at the breech. I cannot see any disadvantage, other than the one of finger-entrapment safety issue, of the sliding breech compared with other loading mechanisms. Break-action rifles have their safety hazards too; I remember my father telling me about his friend who lost his two front teeth courtesy of a break barrel snapping shut suddenly,

It is a mystery to me how the makers of sporting air rifles ignored or dismissed this method of loading for so many decades. The makers of match rifles however, did not. Perhaps because they were shot under more controlled



Anschutz LG220 breech with pop-up pellet 'bridge'



Air Arms Pro Sport breech

circumstances, or by shooters who demanded more from their equipment, the match shooters were presented with this 'ultimate' form of loading in 1959 with the Anschutz 220 air rifle. In 1963 Feinwerkbau followed with the FWB 150 – the rifle that became the 300 recoilless series of world-beaters, and eventually Diana/Original caught up with its Model 75.

How and when the Chinese decided to make a sliding-breech rifle is not something I know; however, by the design it seems influenced by Feinwerkbau, and may have been a production decision as a fixed-barrel slider is easier to make by mass-

production than a tap loader. The finished article looks very similar to a 'real' firearm, military sling swivels and fake 'cocking piece' at the back, so perhaps they were used for drilling by cadets or other military recruits, something that could not be done with a break-barrel.

The HW77 was a rifle developed by

Weihrauch for its long-term agent in the USA, Dr Robert Beeman. It is interesting to note that the Feinwerkbau 300 was one of Dr Beeman's favourite air rifles, so it may be inferred that the sliding-breech finally made the jump from the world of clinical 10 meter target shooting to sporting and FT use via the inspired brain of this Californian. In the sporting rifle market today there are many models that use the sliding-breech, but it is clear that the 77 inspired all of them. As soon as it came out Original Diana produced their sidelever, Air Arms saw the light, then the other lesser makes followed suit.

Of course there are other ways of producing a direct-loading breech, bolt action (Sterling), trap-door (Webley, some Turkish makes) roller-breech (BSA and Gamo) but none of them are as efficient as the 'slider'. One really odd rifle is the tiny sidelever from the FEG factory

in Hungary, sometimes known as the Relum LG69. Rather than having a compression chamber sliding within the airgun main tube, it only had a breech which slid back, pushing the piston into battery. It was withdrawn from sale in the UK as it had no safety mechanism at all and could easily crush a finger.

I think with the development of the sliding-breech air rifle the basic design of the spring-piston air rifle has been perfected. The astonishing accuracy and simplicity of something like the Air Arms ProSport, a well-set up example of which can put all its pellets into a 15mm circle at 50 yards is testimony to that.

The footnote to this brief and personal history of airgun design is my most recent acquisition. A retired engineer, clearly impressed by the sliding breech of the 77, took it upon himself to rework a couple of his tap-loading air rifles, one an Original 50 and the other a Webley Mk 3, both of them underlevers into sliding-breech rifles. Sadly the man died and does not seem to have left any notes. I bought the Original 50 on a whim, with the strict instructions from the shop that it was sold as a curio only and not a rifle for use, as it lacks any kind of safety.

On getting it home I decided to chronograph it. The power was a dreadful 2.2 fpe, although the spring is definitely full power. An external examination shows a strange chamfering of the throat of the breech, which is a definite no-no as it increases lost volume. Presumably he put it there to improve ease of loading. Secondly, I noticed the lack of a sealing 'O' ring at the front of the grooved breech. I put an 'O' ring in and the power jumped to 7.5 fpe, better but still not what one would expect from a .22 Original 50, which should be making 9 fpe at least. Unfortunately I have given my spring-compressor away, and



Original 50 'Frankenstein' (breech closed)

as these rifles are tricky to strip, I am going to take it to a friend who has one and more engineering skill than me to have a look at it.

I was curious to see how the redesign fitted a sliding inner compression cylinder into the rifle and how a smaller piston might have been fitted, but now I have discovered the LG69 I fear that he has made a similar design and only made a breech-block with a long

transfer-port. This will rob power. Still, top marks for having a go, even if he did not understand the intricacies of springer design.

One last thing; break-barrel enthusiasts will say fixed-barrel sliders are too heavy. Well, the weight makes them more accurate in the hands of the average shooter as it damps recoil.

©Alistair McClure



Original 50 'Frankenstein'



Original 50 'Frankenstein' (breech open)

A Pope for all seasons

Jimmie Dee writes a detailed account of the production of the Pope Brothers Rifle Air Pistol, produced by Albert Augustus Pope between 1874 and 1878 and, usefully, explains the often confusing proliferation of similar pistols on sale at the time. As he identifies, the inventor of this ground-breaking pistol contributed to the development of modern airguns – and if circumstances had been different, might have made his mark on the development of modern electric vehicles too.



The Pope Brothers Rifle Air Pistol

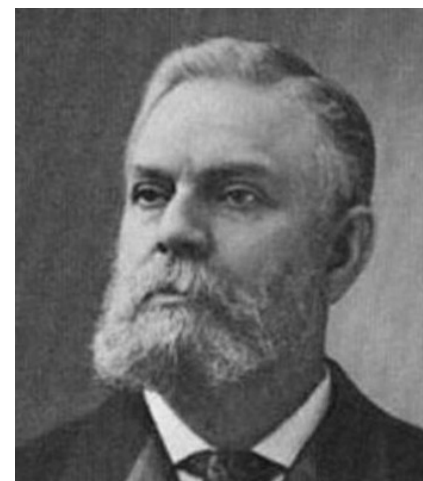
The Pope Brothers Rifle Air Pistol, called a rifle because of its longer barrel and detachable wire shoulder stock, was manufactured in the USA circa 1874–1878 by the Pope brothers (Albert and his younger brother, Arthur) at the Pope Manufacturing Company, 45 High Street, Boston, Massachusetts, USA.

Albert Augustus Pope (May 20, 1843 – August 10, 1909) was a Brevet Lieutenant Colonel in the Union

Army. He was an importer, promoter and manufacturer of bicycles and a manufacturer of automobiles. He was descended from a line of New Englanders which had their roots in the timber and lumber business since the 1660's. However, his father, Charles broke the mould and instead opted for a career in real estate. By 1851, at the age of nine, Albert had become the family breadwinner due to the collapse of his father's business. He earned his

wages through ploughing fields and then selling the produce. By the age of 15, he was working at the Quincy Market in downtown Boston. A few years later he became a store clerk for \$4 a week. It is thought that his well-connected wider family helped him to get ahead and that leaving school had less to do with providing for his family but rather that he could go further and faster on his own. [1]

Pope joined the Union Army on August 27, 1862 at the age of 19 attached to the 35th Massachusetts Volunteer Regiment and commissioned as a Second Lieutenant. He saw action just seven days later during the American Civil War at Antietam. His unit, whose ammunition was exhausted, became stranded behind enemy lines. The order to retreat



Albert Augustus Pope

was given but 79 men from Pope's unit died on that day. At some point, Pope contracted cholera but he and his unit continued to serve, fighting battles at Fredericksburg, Vicksburg and Knoxville. By the time Pope was discharged from the Union Army, he had attained the rank of Captain although he had received the honorary title of Brevet Lieutenant-Colonel for distinguished service. A Brevet title did not carry added authority or pay. He was thus known as Colonel Pope during civilian life. [1]

Albert had accumulated \$900 in savings and after the war, he invested in a shoemakers' supply business at Dock Square

in Boston. In just one year, his investment had returned tenfold. With a successful business, Pope supported three of his siblings through college education, two of whom became physicians and the other a minister. When Pope's eldest brother Charles died a widower in 1868, Pope adopted his nephew, Harry aged nine. Pope eventually married Abbie Linder in 1871 and together they had four sons and one daughter. [1]

Pope expanded his business interests into cigarette rollers, shoe fittings and air pistols but he is better known for the development of the American bicycle and his major role in the development of the automobile and modernisation of American roads than he is for his contribution to air pistols. He was a keen advocate of patents and would invest in other people's patents if he saw potential. Although his air gun endeavours never really took off, he did provide financial backing and manufacturing consultation to other air gun entrepreneurs, ensuring that their ideas and designs reached the marketplace. As a result, his endeavours helped to further the development of the modern airgun. [2]

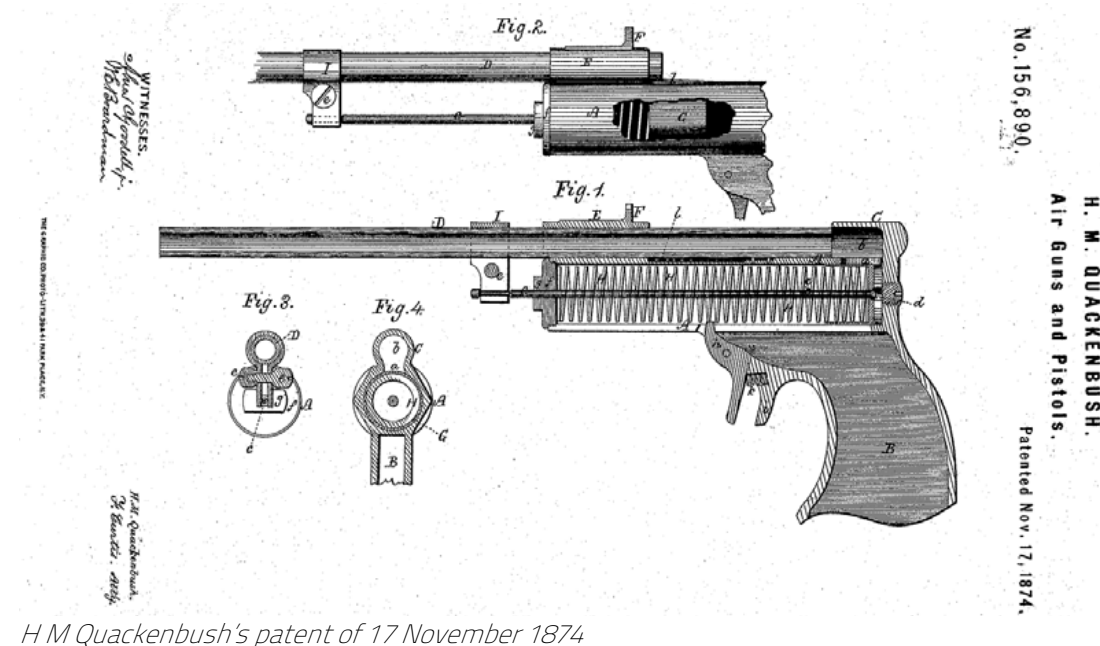
In late 1874, Pope signed an agreement with Henry Marcus Quackenbush, whereby Pope took

over the "Target" name and supported Quackenbush's air gun venture. "Target", or "Target Air Pistol" was the name of Quackenbush's first model pistol, which in itself was an immediate success. Not long after the agreement was signed, Quackenbush applied for a patent, US Pat. 156,890 "Improvement in air guns or pistols" [3], in which Pope was named as the assignee. It was this patent that described, for the most part, the design of the Pope Rifle Air Pistol and was based on Quackenbush's fourth model pistol. Incidentally, Quackenbush refers to the pistol as a "toy" in his patent.

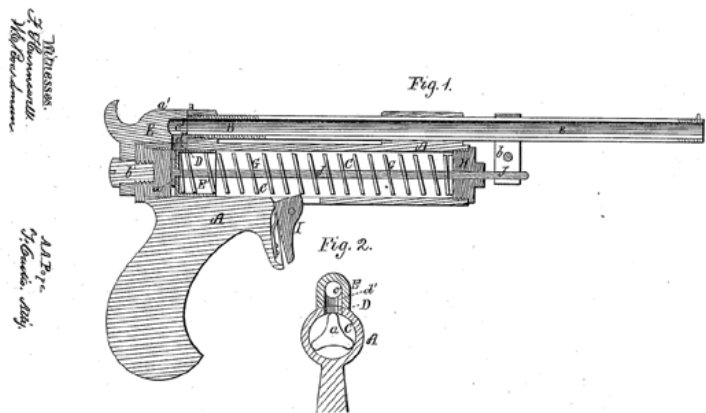


Henry Marcus Quackenbush

The production model of the Pope Rifle Air Pistol included a trigger adjustment screw which allowed the shooter to reduce the length of trigger pull. This was not a feature described in the patent. Also not mentioned in the patent was the wire stock. However, a wire stock was available as part of Quackenbush's fourth model and



H M Quackenbush's patent of 17 November 1874



No. 172,582.
A. A. POPE.
SPRING AIR PISTOL.
Patented Jan. 25, 1876.

A A Pope's patent of January 25 1876

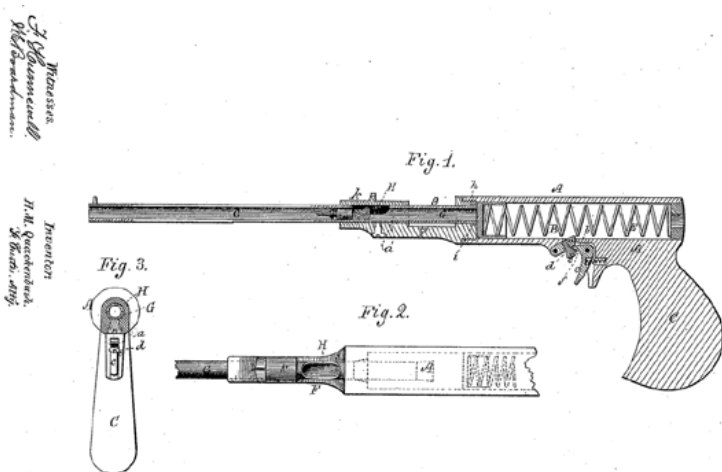
was held in place by a screw in the handle. Pope's wire stock was merely a push fit and did not have a retaining screw.

The following February, 1875, Quackenbush filed another patent, US Pat. 159,354 "Improvement in air-gun darts" [4], relating to air gun darts and their manufacture. He built four complex and delicate automatic dart-making machines and sold one to Pope.

Sometime in late 1875 or early 1876, a dispute between Quackenbush and Pope developed over the dart-making machine. It seems that Pope's staff were unable to get the machine to work reliably. Pope stopped making royalty payments and Quackenbush sued Pope in March 1876. A settlement was agreed a few weeks later in which

Pope returned all the patent rights for both the improvements to air guns and the dart-making machine. However, one of the dart-making machines did work successfully for a century, right up until the Benjamin Air Rifle Company retired it in 1993 after producing two million darts. [5]

A few days after the settlement was agreed, Quackenbush filed the paperwork to reclaim ownership of his patent. But, more significantly, he also filed another patent for an improved spring-powered gun action which became the basis of his Number 1 Air Rifle. Introduced in late 1876, the Number 1 revolutionised the airgun industry and became the design upon which all single-stroke-cocking airguns have been based ever since. Thousands of the Number 1 Air Rifle were sold before the patent ran out,



No. 178,327.
H. M. QUACKENBUSH.
SPRING AIR-PISTOL.
Patented June 6, 1876.

H M Quackenbush's patent of June 6 1876

earning Quackenbush a modest fortune. Clearly the dispute over the dart making machine meant that Pope missed out significantly. It is estimated that Pope would have earned \$100,000 if it were not for the dispute, which would have been a very significant amount in the late 1800s. Pope learnt a hard lesson from his venture with Quackenbush and paid particular attention to patent issues in his subsequent business career. [5]

In January 1876, Pope received two patents in his name. One of which was US Pat. 172,582 "Improvement in spring air-pistols" [6], which describes Pope's improvements over Quackenbush's earlier patent. Pope's improvements were both functional and cosmetic. Functionally, the patents differed in that the barrel was not held rigidly and firmly in place and the cocking rod was no longer clamped to the barrel. The clamp remained but instead it was loosened to allow the cocking rod to move freely using the barrel as a guide. These design differences improved cocking of the pistol as the barrel would no longer be pulled out which could also have improved accuracy due to the fixed barrel. In order to access the barrel opening, a rotating breech block was added; a feature that Frank Clarke added to his later Titan models. Sadly, Pope never produced any pistols based on his improvements.

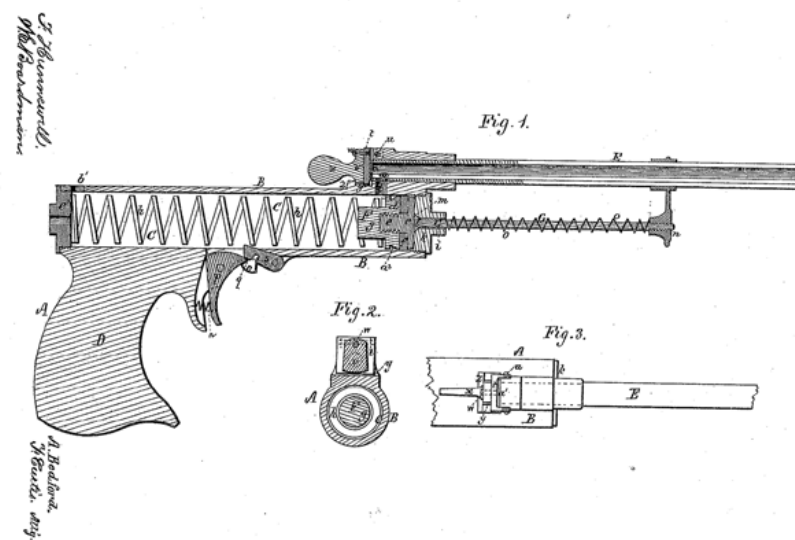
In fact, no other Pope model pistols are known to have been produced beyond the Pope Rifle Air Pistol.

On the other hand, Quackenbush had filed another patent which was granted on June 6th, 1876: US Pat 178,327 "Improvement in spring air-pistols" [7]. This patent described an entirely new design where the barrel and compression chamber were in line as opposed to the barrel mounted on top of the chamber. The pistol would have been cocked by pushing the barrel in to compress the spring and then withdrawing the barrel once

the piston was locked against the trigger sear. The intention was to make it less complicated and easier to cock compared to previous designs. Quackenbush added an orifice at the rear of the barrel to allow the projectile to be inserted. A tubular extension would cover the orifice when the pistol was ready to be fired. The trigger was also improved over previous designs whereby instead of the trigger lever comprising the piston latch and sear, a compound trigger with an extra lever that formed the sear was added in order to lighten the trigger pull.

Sadly, once again, this pistol was not produced in significant numbers. Although this may have been because production of Quackenbush's Number 1 Air Rifle, which was also based on the same push barrel patent, had also begun to be sold and due to its success, air pistols were in less demand. Certainly it is a fact that Quackenbush's company records show that by 1884 sales of Quackenbush's pistol had significantly declined in favour of his rifle. [2] It is worth noting that Quackenbush's final air pistol patent, US Pat. 188,028 "Improvement in Spring Air-Guns" [8], granted on March 6th 1877, was also for a push barrel pistol which, although not a success for him personally, went on to become the most successful and copied design in the history of airguns as the first pop-out air pistol where the barrel and piston were combined.

Despite the dispute with Quackenbush, Pope continued to sell his air pistols and during 1876-1878, Pope also retailed Bedford and Walker's "Eureka" at his premises. It is possible that he may also have manufactured it for a short period. The Eureka is a similar Rifle Air Pistol to Pope's, however there are key distinguishing features that Bedford and Walker patented independently but were combined to produce the Eureka.



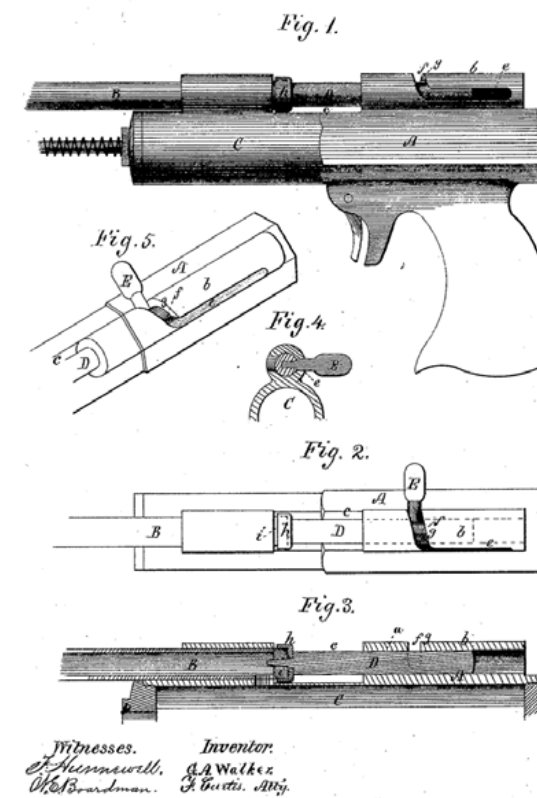
No. 172,376.
A. BEDFORD.
SPRING AIR-PISTOL.
Patented Jan. 18, 1876.

A Bedford's patent of January 18 1876

Bedford's patent, US Pat. 172,376 "Improvement in spring air-pistols" January 18th 1876 [9], described a breech-closing mechanism whereby the barrel of the pistol was located forward at the end of the compression cylinder. It was still mounted on top of the compression chamber but was fixed in place unlike Quackenbush's design. An air passage, known today as a transfer port on modern air rifles, was created between the end of the compression chamber and the barrel. The piston travel is opposite to that of the Pope in that the spring would be compressed moving the piston towards the rear of the pistol by means of a push rod. The piston was also improved

as it comprised of leather or other semi-elastic material sandwiched between two circular discs. This formed a seal that Pope's pistol was lacking. Interestingly, the patent

No. 179,984.
G. A. WALKER.
SPRING AIR PISTOL.
Patented July 18, 1876.



G A Walker's patent of July 18 1876



The Pope Brothers Rifle Air Pistol (left side)

states that should the seal begin to leak, it could be adjusted by tightening the two outer discs thus expanding the leather seal further. Bedford's design removed the need for the push rod to pass through the piston thus improving efficiency significantly.

The patent also described the use of a double levered trigger whereas Pope only used a single lever, the trigger blade combined with sear. Finally, the patent describes the breech mechanism which was a vertical gate, or plate, covering the rear of the barrel and a locking device consisting of a button. The plate was pivoted and could be swung out of the way in order to load the pistol. The sloping wall ensured that the plate would return to a tightly closed position ready for firing.

Walker's patent, US Pat. 179,984 "Improvement in spring air-pistols" July 18th 1876 [10], further improved on Bedford's design of the breech seal. In his design, he introduced a bolt action breech probe which pushed the pellet the required distance past the transfer port and formed an air tight seal against the barrel by means of a leather washer. This method is still used in many of today's modern air rifles.

In 1878, Pope switched his attention to the bicycle business that he had established in 1876. He continued to include an engraving of an air gun on his company letterhead as late as 1880. Bedford took over Pope's premises in 45 High Street, Boston and continued to make the Eureka. By 1880, Bedford's company, the Eureka Manufacturing Company, had ceased to trade and Bedford became an employee of Quackenbush. [2]

Pope's entrepreneurialism did not end with bicycles. In 1896 he diversified further into automobile production and he was particularly interested in developing new clean electric-powered vehicles. He was the first to use mass production practices of automobiles and in 1900 Pope's Hartford factories produced more motor vehicles than any other factory in the world. The acquisition of a number of small companies necessary to build his automobile empire was expensive and competition in the industry was building. That and his dream of the electric car drove him to bankruptcy in 1907. [11]

Pope died two years later on August 10 1909 aged 66. His cause of death was recorded as "locomotor ataxia" which covered an array of symptoms usually associated with Parkinson's disease or the

late stages of syphilis. [11] His automobile empire collapsed by 1915. [12]

The Pope Rifle Air Pistol was available in two finishes, nickel plated or black lacquered (Japanese Black). Two variants of the basic design are known where the compression cylinder length varies by a mere 7mm. This may just be due to the available materials at the time of manufacture. There were also two variations of the wire stock: a straight and a cranked version. The cranked version is much rarer than the straight version. [2]

The spring was flat section as opposed to the usual round and there was no washer on the piston head to seal against the cylinder. However, a leather and metal washer was fitted inside the piston head presumably to seal against the central push rod. The barrel was smoothbore 0.21 calibre only and the sights were non-adjustable. A trigger adjustment screw allowed the owner to adjust the let-off point and length of pull, and functions remarkably well.

There were also differences in the markings on the cylinder plug. There are two listed types. The key differences are that the town of manufacture is present on one and not the other and on one,

the patent listed is actually for an earlier Quackenbush pistol. Other differences include an error in the patent date and the inclusion of patent dates for various other countries whereas the alternative simply stated patented in Europe, which may have been ineffective as there was no central European patent office at the time. It is also worth noting that the patent dates stamped onto the end cap of 1871 are incorrect as they should be 1874. Thus, rather extraordinarily, it would seem that many errors are present on the end cap stamps of Pope's Rifle Air Pistol despite the opportunity to correct the errors

whilst manufacturing the second variant. [2]

The Rifle Air Pistol sometimes had a serial number stamped on the left hand side upper grip area but this was not always present. When present, the last two digits of the serial number may also have been stamped on the piston head. It has been suggested that the parts or indeed complete pistols with serial numbers may have been supplied by Quackenbush to Pope. [2]

The pistol is cocked by holding the push, or rather the pull rod clamp with one hand and the pistol grip with the other. The rod can then be

pulled towards the muzzle of the gun using the barrel for stability until the piston engages on the trigger sear where it will be held in place. The push rod is then returned to its starting position. A dart or pellet is loaded by pulling the barrel forward to expose the breech. Once the dart or pellet is loaded and the barrel is returned, the pistol is ready to fire. There is no safety mechanism.

The pistol can be used as a conventional pistol or shouldered with the optional wire frame shoulder stock. My personal preference would be to shoulder the pistol and use it as a rifle. The power



The Pope Brothers Rifle Air Pistol in its original velvet-lined case



Rear cylinder inscription

is obviously low due to the small air chamber and spring, but also due to the piston design as there is no leather piston seal as found in later airgun designs.

These seemingly insignificant spring air pistols from the late 19th century are anything but insignificant. Clearly there was

plenty of competition concentrated in Boston and the people involved were driven to improve each design further and further, potentially forming a solid basis for the early British air pistol entrepreneurs to incorporate into their air guns and then improve upon. For example, Frank Clarke's MK1 Titan clearly exhibits features from the Pope in that it has a sliding barrel but improved with a bolt catch to lock it in place when

closed. It also features a similar pull rod cocking mechanism. Also, Clarke incorporated the rotating breech block in his MK2 Titan and later designs as described in Pope's patent some 40 years earlier. Quackenbush's pop-out design has been reproduced by numerous British designers and

the Walker bolt action probe, with improvements, is still used in modern rifles and pistols such as the BSA R10, the Crosman 2240 and the Brocock Atomic air pistol over 100 years since its inception.

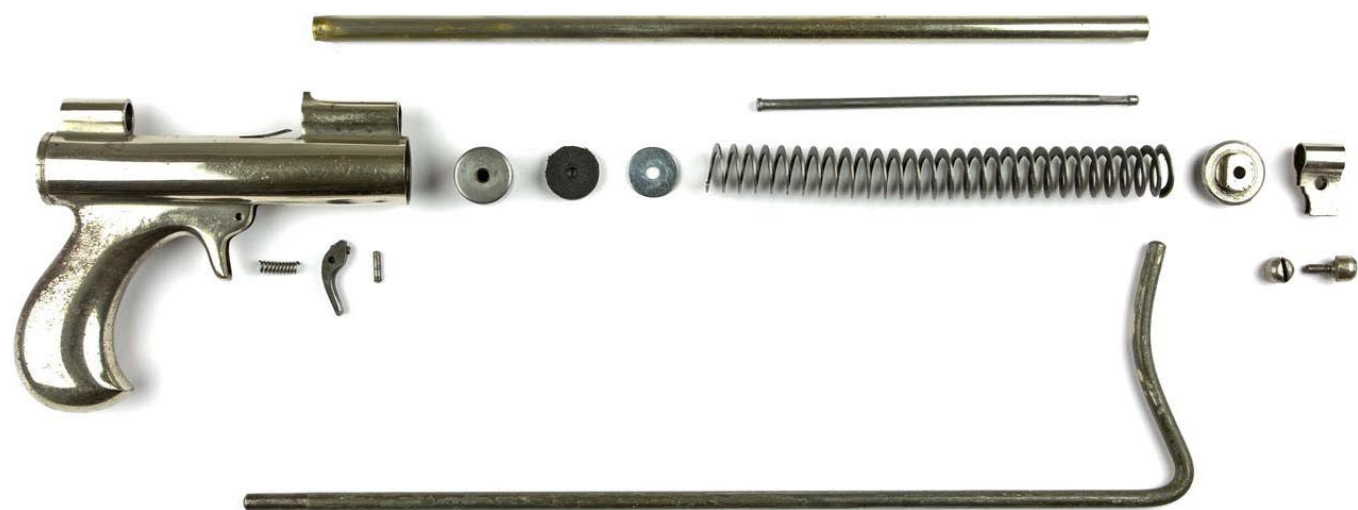
To round up this article, according to sales literature of the Pope Rifle Air Pistol, and other pistols that he sold, one of the most notable customer testimonials is from General W. T. Sherman, who writes:

"From the Commander-in-Chief of the U.S. Army. Headquarters Army of the U.S., St. Louis, Mo., Feb 22nd, 1875.

Dear Sirs: I have now been in possession of the Rifle Air Pistol for nearly a month. It has wonderful attraction... Thus far all the parts work well, and nothing is out of order. It is surely ingenious in mechanism, quite accurate in aim, and useful in preparing one for the more serious handling of the ordinary rifle. As such, I have no hesitation in recommending it as the best Parlor Pistol of which I have knowledge.

Yours, truly,
W.T. SHERMAN, General." [5]

Whether this was Sherman's true opinion or written as a favour for Pope who can say, but it is known



The Pope Brothers Rifle Air Pistol dismantled



The Pope Brothers Rifle Air Pistol (right side, cocked and ready for loading)

that Pope used it to promote all of the pistols that he sold.

The Pope Rifle Air Pistol pictured is not completely original. At some stage the push rod clamp has been replaced with an equivalent fabricated from brass. The end of the rod has been threaded and a crude square nut added to prevent the clamp from slipping off the end of the rod. The leather washer has been replaced, fashioned from a charity shop, and the metal washer that sits between the spring and the leather washer is also a replacement, as both the leather and metal washers were not present when the pistol was obtained. The pistol has also been re-plated.

This article has taken us on quite a journey. To begin with I'm sure we all thought we would read about the airgun and some of the designer's background relating to airguns. Instead, we have learnt that whilst Pope's contribution to air guns may be small, his contribution to the American nation and perhaps the world was significant. He built a financial empire that placed Hartford at the centre of the automobile and bicycle industry.

His pioneering efforts to provide a clean electric alternative of the dirty gasoline automobiles was doomed by the battery technology of the period. It is only in recent years that practical electric vehicles have

become a reality. With hindsight, it is easy to say that the demise of the electric automobile of the early 20th century may have been due to the commercial and financial battles of the automobile and oil industry of the time. Perhaps investment in battery development just wasn't considered profitable due to the considerable availability of cheap oil.

Maybe the gasoline automobile was simply more powerful. But I wonder how different the world may be now, environmentally, politically and economically if Pope's electric automobile had risen to become the dominant vehicle. At least we can

be grateful knowing that this giant played a part in the development of our airgun heritage.

Albert Augustus Pope – I salute you, sir!

© Jimmie Dee

REFERENCES:

[1] Albert Augustus Pope, Wikipedia, https://en.wikipedia.org/wiki/Albert_Augustus_Pope

[2] The Encyclopedia of Spring Air Pistols by John Griffiths, ISBN



A box of H M Quackenbush felted slugs and some darts



The Pope Brothers Rifle Air Pistol with detachable wire shoulder stock

9780955951602

[3] US Patent 156,890
 "Improvement in air guns or pistols", Henry M. Quackenbush, United States Patent and Trademark Office, <http://pdfpiw.uspto.gov/.piw?docid=00156890&PageNum=2&IDKey=84D6D752417F&HomeUrl=http://patft.uspto.gov/netahtml/PTO/patimg.htm>

[4] US Patent 159,354
 "Improvement in air-gun darts", Henry M. Quackenbush, United States Patent and Trademark Office, <http://pdfpiw.uspto.gov/.piw?Docid=0159354&idkey=NONE&homeurl=http%3A%252F%252Fpatft.uspto.gov%252Fnetahhtml%252FPTO%252Fpatimg.htm>

[5] 1875 Pope Brothers Rifle Air Pistol, http://www.oldbike.eu/centurycolumbia/?page_id=388

[6] US Patent 172,582
 "Improvement in spring air-pistols", Albert A. Pope, United States Patent and Trademark Office, <http://pdfpiw.uspto.gov/>

[piw?Docid=0172582&idkey=NONE&homeurl=http%3A%252F%252Fpatft.uspto.gov%252Fnetahhtml%252FPTO%252Fpatimg.htm](http://pdfpiw.uspto.gov/.piw?Docid=0172582&idkey=NONE&homeurl=http%3A%252F%252Fpatft.uspto.gov%252Fnetahhtml%252FPTO%252Fpatimg.htm)

[7] US Patent 178,327
 "Improvement in spring air-pistols", Henry M. Quackenbush, United States Patent and Trademark Office, <http://pdfpiw.uspto.gov/.piw?Docid=0178327&idkey=NONE&homeurl=http%3A%252F%252Fpatft.uspto.gov%252Fnetahhtml%252FPTO%252Fpatimg.htm>

[8] US Patent 188,028
 "Improvement in Spring Air-Guns", Henry M. Quackenbush, United States Patent and Trademark Office, <http://pdfpiw.uspto.gov/.piw?Docid=0188028&idkey=NONE&homeurl=http%3A%252F%252Fpatft.uspto.gov%252Fnetahhtml%252FPTO%252Fpatimg.htm>

[9] US Patent 172,376
 "Improvement in spring air-pistols", A. Bedford, United States Patent and Trademark Office, <http://pdfpiw.uspto.gov/.piw?Docid=0172376&idkey=NONE&homeurl=http%3A%252F%252Fpatft.uspto.gov%252Fnetahhtml%252FPTO%252Fpatimg.htm>

[ocid=0172376&idkey=NONE&homeurl=http%3A%252F%252Fpatft.uspto.gov%252Fnetahhtml%252FPTO%252Fpatimg.htm](http://pdfpiw.uspto.gov/.piw?Docid=0172376&idkey=NONE&homeurl=http%3A%252F%252Fpatft.uspto.gov%252Fnetahhtml%252FPTO%252Fpatimg.htm)

[10] US Patent 179,984
 "Improvement in spring air-pistols", G. A. Walker, United States Patent and Trademark Office, <http://pdfpiw.uspto.gov/.piw?Docid=0179984&idkey=NONE&homeurl=http%3A%252F%252Fpatft.uspto.gov%252Fnetahhtml%252FPTO%252Fpatimg.htm>

[11] Albert Augustus Pope, Transportation Pioneer, Gregg Mangan (PhD), <http://connecticuthistory.org/albert-augustus-pope-1843-1909/>

[12] Pope Manufacturing Company, Wikipedia, https://en.wikipedia.org/wiki/Pope_Manufacturing_Company

You can read more of Jimmie's articles at:

<https://www.facebook.com/jimmiedeesairguns>

Buried beauties

In this pictorial, Frank Korn gives us a tour of some rarely-seen spring air rifles from the post-war period, including the Krieghof, which was made for just one year after WW2 before the factory returned to firearms production, and the Breda Arill Deluxe, with its beautifully chequered and figured walnut stock.

One of the nice things about collecting is finding an unknown collectable airgun in a online auction.

The seller states there is no marking on it whatsoever and adds blurry pictures, taken with a cheap camera without flash or adequate lighting – that is all you have to go by.

Most of the times it *does* have markings, but they are covered by dirt or rust.

A lot of them are cheap Chinese models but once in a while there are hidden treasures amongst them.

The key to success is determining what it is *not*, and that's only possible by knowing your stuff!

Looking at the shape of the stock, trigger guard, sights etc can give a lot of information.

For years it was a sport for me to look for a brief moment at every picture of air rifle I could find and see if I could determine the brand and model just by that one glance.

Having said that, I learn about new (to me) collectable airguns almost every day surfing the web.

Here I'd like to show some I have gathered during my years of collecting.

Sometimes you just get things offered to you because people



A break-barrel by Pieper Bayard in Herstal, Belgium



This is a nice rifle with some factory standard engraving. It was sold in the US under the HY-SCORE brand in a simplified form



CUNOX sliding breech underlever rifle



CUNOX (without dimensions)



FLECHA model 14 (maker unknown)



Hubertus rifle made in Germany by Hubertus Metallwerk OHG, Schlüter und Sohn in Mölln



Hubertus (lever lock detail)



The Hubertus has a protruding piston rod when cocked – a nice detail.



Krieghof rifle, made only for one year as a startup after WW2 before the factory returned to firearms production



Krieghof (pistol grip detail)



La Mondiale – two types made in Liege (Luik) Belgium.



Cylinder inscription: 'Brevete Belge La Mondiale Liege'



Mahely, made by Industria Argentina. A rare combination of features: thumbhole stock, sidelever cocking, tubular magazine, and swing-out loading gate.



Mahely rifle (sidelever detail)

know you collect airguns and are not afraid to 'do a little bit of restoration' – meaning (in this case) an awful lot of work!

Breda Arill air rifles

The Breda Arill Air Rifles were built by Breda Meccanica Bresciana in Italy during the 1950s and '60s.

The rifles shown are 'liberated' Italian Army training airguns

that should have been destroyed because it is not allowed (in Italy) to let army surplus to fall in to civilian hands.

Stamped on top of the cylinder is BREDARILL-BREDA or BREDARILL-1M BREDA; even one with BREDARILL-0 BREDA. The last two are without the barrel latch and resemble a BSA Cadet. The trigger adjustment is a very old fashioned style screw-through the trigger guard. To 'break' the barrel you have to slide the knob in the cocking lever to the rear – again this is a very old design similar to the Favorit rifles made by Friedrich Langenhan. The calibre is 4.5 mm and the barrel is rifled.

As far as I know, they managed to save only a few from destruction, albeit that the barrels were cut off



CondoRifle underlever, made in Italy by Modesta Molgora Mondial



CondoRifle: underlever cocking with magazine hidden under barrel



A group of Italian Army training airguns that were left outside to rust



Breda Arill Standard with beech or walnut stock

and were deliberately covered with a mixture of soil and water to be left outside in the elements...

The guns that were saved will have replacement barrels fitted to them at a later stage. Although they are made in the old-fashioned style, they are very well made. Everything is made out of solid steel and there are no stamped parts. They must have been specially made for the army as trainers because these

guns were never sold on the private market in Italy.

On one of them was a sticker that indicated they were meant to be used for target practice. The place name Levanto on the sticker makes the connection to the nearby La Spezia Naval Base on the Ligurian Sea.

The base was built in 1869 and was one of the most important in Italy.



Breda medallion



Breda Arill Deluxe with four-panel chequered walnut stock

Nearly completely destroyed during WW2, it was rebuilt in the postwar years and has been home to the 1st Naval Division. They built a training centre for recruits as well, where

the men were trained in shooting and they used these airguns for the first practice lessons. When the recruits had mastered it, they would be 'upgraded' to the M1 Garand

rifles left behind by the Allied forces, these were destroyed too when the training centre was closed.

The base is located at a place that is easy to attack in modern day



Breda Arill Deluxe (chequering detail)



Breda Arill square triggerhousing with beech stock and no medallion in the stock



Breda Arill square triggerhousing with beech stock and no medallion in the stock (cylinder end cap detail)



Breda Arill 1M with beech stock



Breda Arill 1M



Breda Arill 1M (breech block stamping)



Breda Arill 0 with beech stock, same as above but different stamping



Breda Arill 0 with beech stock (cylinder stamping)

warfare, hence it is redundant and it is closed down for the most part. Some units were left in La Spezia

but the main activities are all gone. In the 1970's the Italian Army used the Diana model 35 as the official

training rifle. ©Frank Korn

Going... going. Gone!

Auctions can be a good way to build an airgun collection, although they are not what they used to be, with the internet spreading the ability to buy airguns into living rooms up and down the land. Mick Watts reminisces about the good old days when sometimes leg work paid off, and points out some pitfalls for the unwary auction buyer of today



Very early Lincoln Jeffries serial no. 148

All about auctions. Well, when I first started collecting airguns way back in 1986, I soon found out about gun auctions and they turned out to be a good source to form the basis of my collection. My nearest auctioneers were Weller & Dufty, Birmingham. I had some really good buys from them including my early Lincoln Jeffries serial no 148 in a job lot and

I still can't believe my luck with that one – it wasn't until I got home and came to put the details into my book of guns that I bought, that I realised it was serial no 148. Although not in the best of condition, it's still a nice bit of early Lincoln Jeffries history.

Another very good early buy from Weller & Dufty was a Westley

Richards, 'Highest Possible' concentric pistol, that was catalogued simply as a 'Highest Possible' model with no photo. I swapped it a bit later on for some other airguns as I didn't like it that much at the time. How I regret it now, as I didn't know it was so rare. Such is life! This pistol was featured in an article in *Air Gunner* by John



One that got away: Improved Model Britannia (photo copyright John Milewski)

Atkins, along with other Westley Richards concentric pistols that the new owner had collected, showing the difference in them.

I also got some nice Webley pistols and Webley Service Mk11 rifles from them as well. Those were the days.

Some of the ones that got away because I would not go the extra bid or didn't have enough money at the time, were an early spade cocking lever BSA Military Pattern, Improved Model Britannia, Haenel model V Rep with drum magazine, boxed Westley Richards 'Highest Possible', and a cased Walther LP53 with blue silk lining,

After all, that was where dealers went to buy their stocks didn't they? So I thought I would go along and then if I could outbid a dealer I would be cutting out the middle man and saving myself a few pounds in the process. In those days you had to do all the leg work such as buying/sending for a catalogue as there was no online bidding then.

I found that it was usually cheaper to have an annual subscription rather than buying single catalogues. The drawback was that you had to rely on their descriptions and hope they gave an honest opinion which was not always the case. If I was

interested in something I then either had to have time off from work, book a day's holiday or work the weekend to make up the time, so that I could view the lots to see if they matched their descriptions and values. I used to try to view on the day of sale which was good, otherwise I would have 'phone up and leave a maximum bid and take a chance that I would win the gun – while hoping that I got it for less than my top bid.

Back then the auctioneers fees were around 10% on the hammer price plus Vat on the auctioneer's fees which, if memory serves me well, was 15%.

I must say I had some very good buys doing this, out-bidding some of the dealers and saving myself their profit margin. There were not many private buyers at the time so there was not much competition. Fast forward to now and how things have changed. Auctioneers charge a minimum of 15% if you are lucky; usually more and Vat is now 20%.

The only benefit now is you don't have to buy the catalogue as long as you have a computer but the competition is a lot more as bidders don't have to leave the comfort of their own homes to buy an air pistol or rifle, but merely press a button.

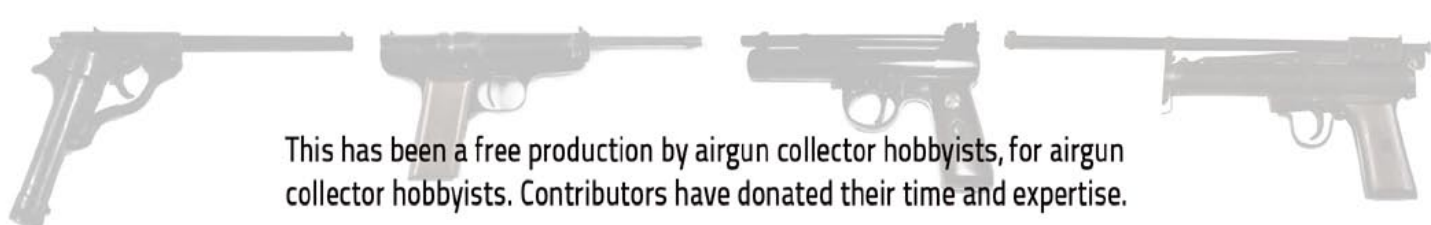
You can view online other non-gun specialist auctions, which also turn up airguns from time to time.

The downside to auction bidding is that you can sometimes get carried away and pay more than you really wanted to pay. I know I have done this occasionally myself. Also, if you can't get to collect the guns that you have bought it can be quite expensive to get the auctioneers to arrange for delivery – so be warned.

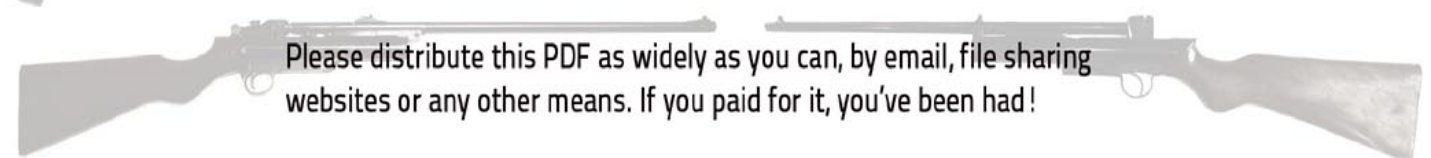
I have found that some of the descriptions are just as vague as they used to be but at least you can ask for more photos and extra information, such as whether it is in working order. However, some auctioneers skirt around this one by saying it has not been tested, which is a good get-out for them.

Sometimes you can still get lucky and pick up the odd bargain or two, as was the case with the late David Swan's great collection auction sale at Anderson & Garland in Newcastle-on-Tyne only last year (see p.27). There was certainly a lot of bargains to be had that day, with a lot of happy collectors, I was one of them.

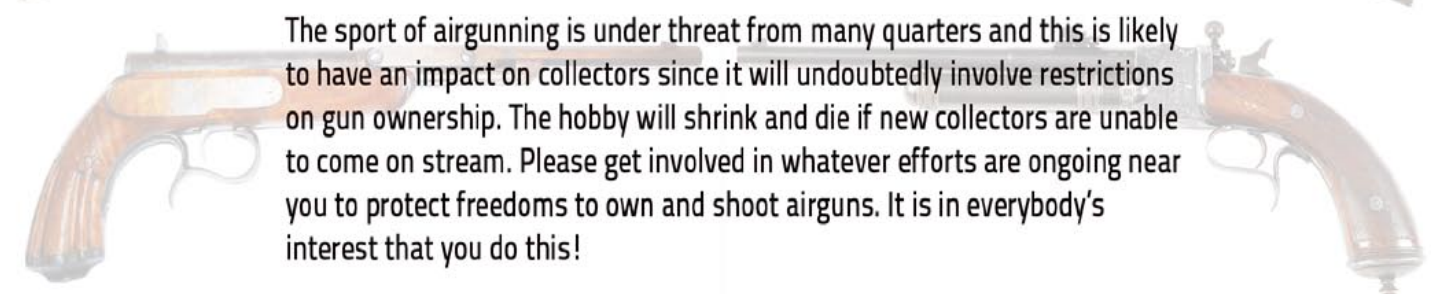
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The sport of airgunning is under threat from many quarters and this is likely to have an impact on collectors since it will undoubtedly involve restrictions on gun ownership. The hobby will shrink and die if new collectors are unable to come on stream. Please get involved in whatever efforts are ongoing near you to protect freedoms to own and shoot airguns. It is in everybody's interest that you do this!

