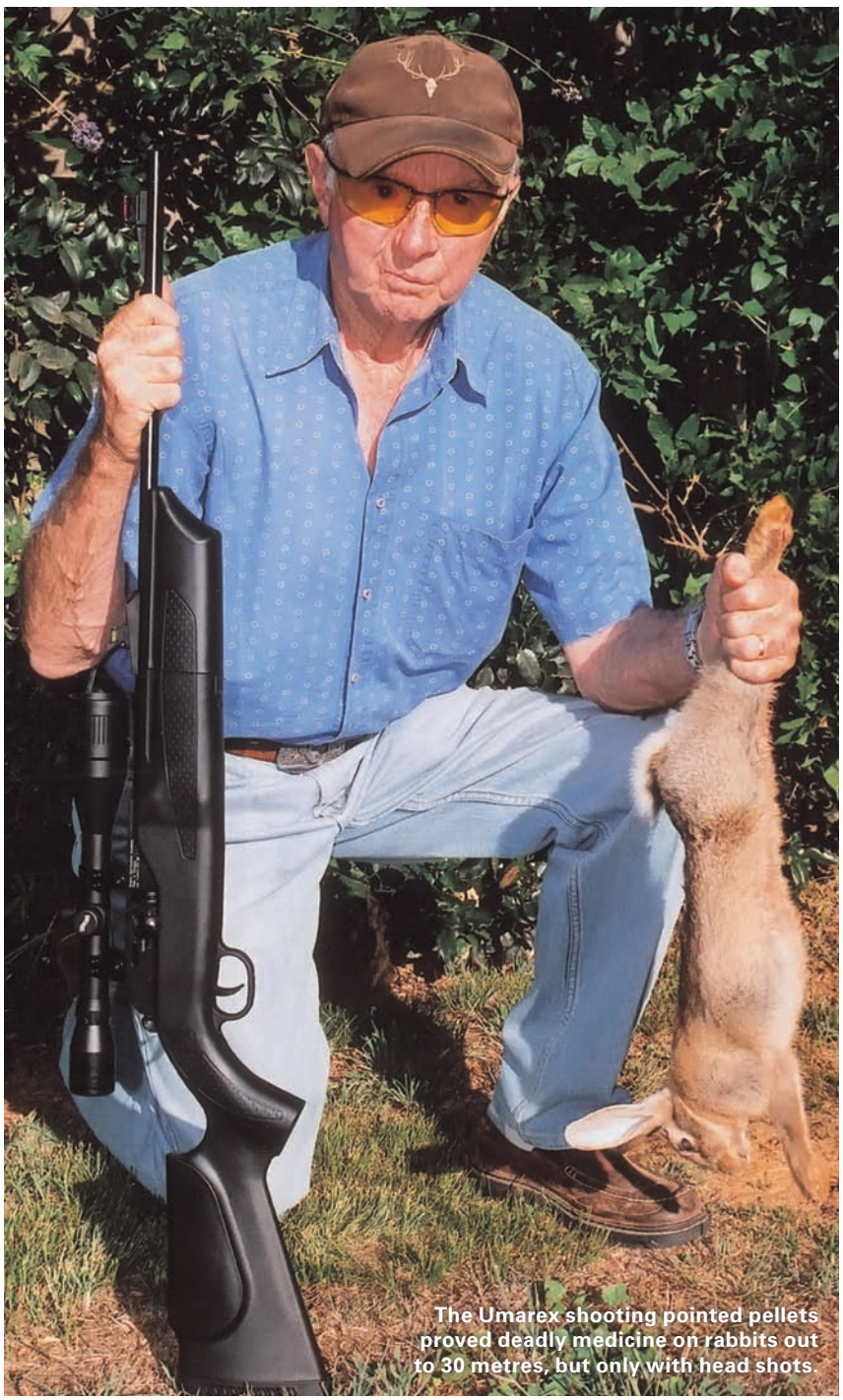
Test Report

by Nick Harvey

UMAREX 850 AIRMAGNUM Co2 KIT



The Umarex shooting pointed pellets proved deadly medicine on rabbits out to 30 metres, but only with head shots.

MODERN CO2 POWERED air rifles not only provide the ideal vehicle for practicing the basics of fine shooting, but a repeater adds greatly to the fun and enjoyment of seasoned shooters. The airguns that I most enjoy are the variety that achieve full power without having to exert a lot of muscle power. To cock the gun using the barrel as a cocking lever, takes a lot of effort to compress the massive mainspring in a powerful spring-piston rifle.

Some air rifles use a lever under the barrel or on the side to compress a volume of air that is in turn released to propel the pellet. Then there are pump-up pneumatics which are a real drag, because they require a lot of physical effort, noise and motion to fill the reservoir. Other guns use a scuba tank to fill a large reservoir and this requires a lot of unwieldy equipment such as air hoses and pressure valves as well as the need to refill the scuba tank periodically. Still other guns use an air spring - pre-compressed air in a captive air chamber which serves the same purpose as a steel spring and is not released from the gun.

My favourite type of air rifle is the Co2 gun which has some very definite advantages to offer over spring-piston and pneumatic guns. The most obvious is the lack of any strenuous physical effort, since there is no powerful spring to cock or pneumatic pump to operate in preparation for the shot. Once the gun has a Co2 cylinder installed, a more or less constant number of shots can be had with ease. Another advantage is that Co2 operation lends itself admirably to repeating mechanisms. This makes the Co2 gun an extremely valuable training tool for basic marksmanship and firearms safety instruction.

The Co2 gun enjoyed a tremendous revival following a slump that lasted through most of the 1970s and early 1980s when the incredibly successful paintball games hit the market. This in turn led to the development of high-tech sporting air rifles like the Umarex 850 AirMagnum under test. This is a repeater utilizing an 8-shot rotary clip which allows various pellets differing in shape, weight and up to 10mm in length to be shot. Featuring a uniform rapid rate of fire, this reliable high powered air rifle drives .177 pellets up to 760 fps and .22 calibre pellets at 660fps.

Unlike many magnum air rifles which are too heavy and ponderous for hunting purposes, the Umarex 850 AirMagnum is light and handy, and well-balanced for shooting offhand and from hastily assumed field positions. The black polymer stock is ambidexterous with a cheekpiece on both sides of the butt. A high comb brings

the eye in line with a scope which this rifle so richly deserves. The forend is handfilling and rounded and has finger grooves for grasping.

A safety catch at the rear of the receiver is engages automatically after each shot, however, it can be applied and released manually. It's easy to remove the drum magazine for reloading; draw both the bolt and magazine retainer catch to the rear, and the spindle on which the magazine rotates is withdrawn from its hole in the centre of the magazine, allowing it to fall out. Insert 8 pellets and replace the drum, slide its retainer forward and close the bolt. The gun is ready to shoot once the safety is disengaged.

The front end of the forend is detachable. It hooks under a clip attached to the barrel and is removed by pressing on the rear clip and then sliding it foward. A 88 gram Co2 cartridge is slid in and turned onto the valve thread until the end cap is pierced. The maker recommends that you tighten the cartridge right up before backing it off 1/4 of a turn in order to equalize tolerances between different brands of Co2 cartridges.

Alternatively, the gun can be powered by two 12 gram cartridges and the charging format is basic for its genre. First the breechbolt is retracted fully to the rear and the safety engaged. The two 12 gram cartridges are inserted back to back in an adapter which screws onto the gun's compression tube in the normal way and is hand tightened. These little seltzer bottles may be more easily obtainable in many areas than the 88 gram Walther cartridges. The adapter should not be opened under pressure, but can be depressurized by pressing the valve on a firm base after

ABOVE LEFT: The forend cap is removed and the gas cylinder inserted and screwed onto a threaded nipple with a pin which punctures the seal.

ABOVE: The rotary magazine is removed and loaded with eight pellets before being replaced.

UMAREX PERFORMANCE TABLE

Pellet (type)	Weight (grains)	Velocity (fps)	8-shot Groups 23 metres	
			Smallest	Largest
Umarex	7.5	766	0.75	1.00
Beeman Crow Magnum	8.6	712	0.75	0.90
Gamo Rocket	9.5	682	0.87	1.00
Beeman Ram Jet	9.8	686	0.95	1.20
Beeman Silver Sting	9.0	709	0.98	1.10

Accuracy with the various pellets was consistently good, but Beeman Crow Magnums showed a slight edge over the others. Gamo Rockets had the deepest penetration of all.

SPECS

UMAREX 850 AIRMAGNUM

Manufacturer: Umarex Sportwaffen GmbH & co. KG, Arnsberg, Germany.
Power: 88 gram Co2 cartridges or 2x 12g Co2 cartridges (adapter optional but included with kit.
Calibre: .177 and .22
Barrel length: 600mm
Length: 1040mm
Weight: 2600g
Muzzle velocity: 760 fps in .177; 660 fps in .22
Sights: front, ramped Truglo bead; rear u-notch with two green dots; picatinny rail for scope rings
Trigger: single stage, adjustable for length of pull
Stock: black polymer, ambi-dexterous
Likely price range: $695-$1145.
Features: automatic safety; muzzle compensator
Trade enquiries: Frontier Arms, GPO Box 2317, Adelaide, SA 5001. PH: (08) 8373 2855 FAX: (08) 8373 2930

THIS PAGE: The bolt is drawn back. When it is pushed forward the rodlike tip pushes a pellet out of the magazine and into the barrel.

which it can be unscrewed and the cartridges removed.

Harnessing compressed Co2 (carbon dioxide to propel a pellet is not as recent than some other systems; it has been around longer than many shooters realize. Patents for Co2 guns were granted in 1889 to Paul Giffard of France. In more modern times, the Co2 system has been successfully used in rifles and pistols adapted to shoot hypodermic darts loaded with tranquilizing drugs, to capture wild animals alive or to transport them to another locale.

The mechanics of Co2 guns are quite similar to those of pneumatic guns. The principal difference is that the Co2 gas is pre-compressed rather than being compressed in the gun as needed. Though certain other gases could be used as a power source, carbon dioxide has the physical and chemical advantages of being non-inflammable, non-corrosive, odourless, inexpensive and not inclined to react chemically.

The Umarex came with a number of the familiar little seltzer bottle cylinders and two 88 gram Co2 cartridges in which Co2 is compressed in liquid form. When a 88 gram cartridge is inserted into the gun's forearm and screwed up tight, it is punctured by a sharp pin and a certain amount of liquid boils off in gas form to fill the gas reservoir. When a specific amount of gas has boiled off, the resulting vapour pressure keeps the remaining carbon dioxide liquid. This fortunate charactaristic, is crucial to the practical operation of Co2 guns and repeaters like the Umarex AirMagnum.

The principal advantage of the Umarex AirMagnum is its fast and effortless operation, both cocking and loading are accomplished on the bolt's opening and closing motions and operation is smooth and positive. Cycling the bolt pushes a pellet from the rotary magazine into the bore. When the trigger is pulled the striker opens the exhaust valve, and the gaseous Co2 is vented off to propel the pellet. The exhaust valve closes immediately, and Co2 gas is again boiled off until the vapor pressure reaches equilibrium with the remaining liquid.

The evaporating Co2 has a refrigerant effect which noticeably cools the guns gas chamber and barrel. This is greatly to the advantage of the Umarex since this cooling effect can result in a slight, but steady, reduction of gas pressure if the gun is fired rapidly. Under normal conditions, however, the vapour pressure is constant and results in quite uniform velocities. The boiling off period of Co2 gas is virtually instantaneous, occurring faster than you can work the bolt and pull the trigger.

The speed and ease of shooting Co2 guns like the Umarex AirMagnum causes them to be fired more freely than other type of air guns, and this leads to the main objection - the expense of replacement gas cylinders. The number of shots per cylinder in these guns ranges from 30 to 80 or more. The only drawback with Co2 guns is that the last few shots from a nearly empty cylinder will have noticeably lower velocity than normal. The Umarex lacks a low-pressure release valve which would automatically empty the cylinder when Co2 pressure falls below practical shooting levels. Umarex advises against trying to shoot the gun with an 88 gram cartridge that has low pressure.

The slim 660mm long barrel is fitted with a set of ramped open sights - a rear sight with the U-notch emphasized with two green dots and a red TruGlo bead at the front. The Umarex receiver has an integral picatinny rail and my test gun came with a Walther 6x42 scope with focusing objective (parallax adjustment is essential to any airgun scope) already attached.

The Umarex is also accompanied by a lightweight polymer compensator which attaches to the muzzle. The front sight is removed and the compensator slid on and secured with a grub screw.

Trigger travel is adjustable by inserting a screwdriver blade through a hole in the trigger guard and turning a screw on the trigger.

The Umarex proved to be extremely ammo tolerant, grouping remarkably well with a wide range of pellet brands. So much so, that determining a standout was difficult, but at 10 metres, the, 8.6gn Crow Magnum held a slight edge over several other popular pellets, averaging 0.25inch for five shots. This pellet also performed quite well out to 25 metres, printing 5-shot groups that averaged 0.90 inch.

Relatively few Co2 guns are currently available in this country and only a couple of models fall within the magnum class. The Umarex 850 AirMagnum is not only potent but quite elegant and reasonably priced. The rifle bare sells for $629.00 and the rifle with kit is $1029.00.All 850s are supplied with two 8-round magazines and two 88 gram Co2 cylinders. ■

The accuracy of the Umarex 850 Airmagnum can be judged by these two 8-shot groups shot at 25 metres with Umarex pellets.