Fact Sheet 22

Air Gun Range Setup

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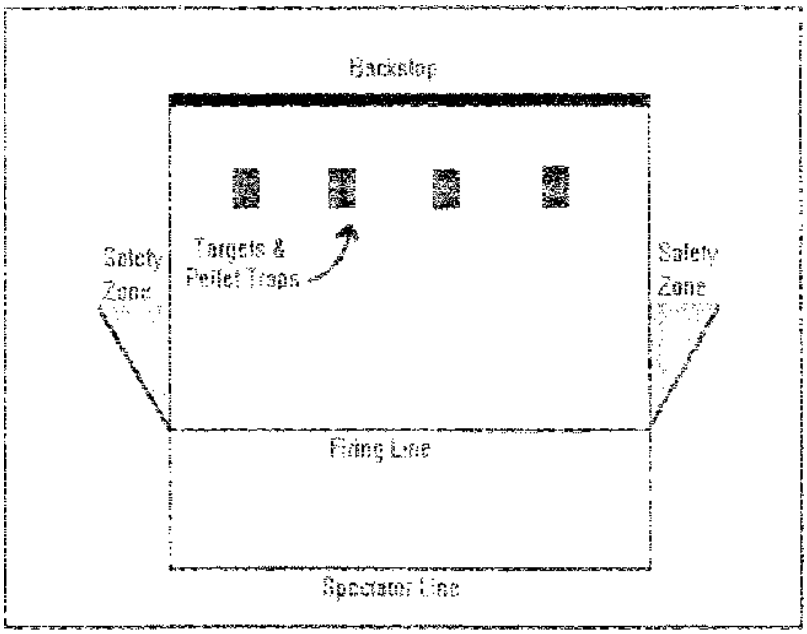
There are several reasons for using BB guns, air rifles, and air pistols rather than conventional firearms in a shooting sports training program. One is the lower cost of equipment and ammunition. Second is that the safety requirements and marksmanship skills needed when shooting conventional firearms are easily taught when using air guns. Another advantage in using air guns is the minimal space required for an air gun range. A simple air gun range can be set up indoors or outdoors, if safety requirements are observed.



Air Gun Range Diagram

Air gun ranges can be set up in locations where conventional firearms ranges cannot be used because concerns about cost, noise, weather and a variety of other conditions exclude them. An indoor air gun range does not need the expensive ventilation and filtration system for toxic lead fumes and particulate matter that is required for a conventional indoors firearms range. Outdoor air gun ranges require much less space than conventional firearms range and they do not attract the attention of neighbors.

Safety Considerations

When you are planning to set up an air gun range, you need to consider the following topics in your plan:

- The RANGE of the air gun;
- The PENETRATION of the projectiles;
- The possibility of RICOCHETS; and PERIMETER SECURITY to prevent people and animals wandering into the range.

Range and Penetration

The RANGE and PENETRATION of air guns will vary with the types of gun. It is reasonable to expect a simple spring-powered BB gun to shoot BB several hundred feet. Compressed gas pellet guns may shoot pellet several hundred feet. Compressed gas pellet guns may shoot a pellet several hundred yards or more. Specific information is available from the gun manufacturer.

Ricochets

All projectiles tend to RICOCHET when they hit a hard surface and do not penetrate it. Projectiles from air guns are relatively low-powered and they are used for shooting at fairly short ranges, so ricochets need to be a particular concern.

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BBs are quite hard and shot from low-powered guns. They readily bounce back at the shooter when they hit hard surfaces.

Pellets are made of soft lead. They deform and lose energy when they hit hard surfaces, so they do not bounce back as strongly as BBs.

EYE PROTECTION must be mandatory for all shooters and instructor staff. Look for the ANSI Z87-1 rating on safety glasses to be sure they provide adequate protection. Spectators should be kept well back of the shooting line and encouraged to wear eye protection as a precaution.

Perimeter Security

PERIMETER SECURITY is essential to prevent people and pets from wandering into the range area. Air guns make little noise, so sound will not alert people to the fact that the range is in operation. The range will need physical markers (surveyor tape, etc.) to delineate the boundaries and safety zones.

A SPECTATOR LINE should be established at least 15 feet behind the FIRING LINE to avoid crowding and distracting the shooters.

SAFETY ZONES should be established on each side of the range if it is outdoors. They should extend from the firing line at about a 30-degree angle to end of the range.

Distance from Firing Line to Target

The distance from the firing line to the target depends on the guns in use and the type of course to be fired. The following guidelines may be used.

- BB guns – 5 meters (16.4 feet) from the firing line to the target face.
- Air guns firing pellets – 10 meters (33 feet) is the usual distance from the firing line to the target face for most practice and target competition. It may vary from 25 to 45 yards for special courses of fire. If space is limited, targets may be set up at 5 yards for air gun practice.

Backstop Requirements

Good backstops are required to make sure projectiles do not go beyond the end of the range. Proper backstops also prevent the ricochets that occur when low-powered BBs and pellets hit a hard surface backstop. A backstop surface that absorbs energy will reduce the possibility of ricochets. Two backstops are commonly used on air gun ranges, a PRIMARY BACKSTOP and a SECONDARY BACKSTOP.

The PRIMARY BACKSTOP can be a commercially available metal pellet trap or a simple home-built pellet trap consisting of a cardboard box with a pellet-stopping interior. An effective pellet-stopping interior may be constructed by simply filling the box with wadded newspapers and a few magazines in the rear of the box to completely stop the projectiles.

A loosely hanging piece of old carpet or canvas in the box will work with BB guns and pellet guns that have muzzle velocity less than 550 feet per second (fps). Pellets at velocities greater than 550 fps may penetrate the carpet or canvas. If a piece of rubber-backed carpet is used, be sure to keep the rubber to the rear so that projectiles will not bounce back at the shooter.

Always use tape to secure targets to the cardboard box backstop. Thumb tacks, clothes pins, spring clamps, paper clips, and other hard fastening devices can cause ricochets.

If a commercially available pellet trap is to be used, be sure to read the manufacturer's specifications to be sure the trap is appropriate for the air gun to be used.

Also, be sure to follow the manufacturer's recommendations regarding targets and the method of fastening the target to the pellet trap.

A SECONDARY BACKSTOP is needed to stop any projectiles that miss the primary backstop. Several suggestions for a secondary backstop include;

- A large piece of loosely hanging canvas or old carpeting;
- Bales of hay;
- A soft dirt bank;
- A large metal plate angled down at 45 degrees to direct

projectiles into the ground

or

- Any other type of protective barrier that will stop the projectiles and not cause ricochets.

Caution: If loosely hanging canvas or carpet is used, leave the sides and bottom hanging loose. Depending on the material, projectiles may ricochet or penetrate the material if it is tightly secured. Also keep in mind that projectiles traveling over 550 fps may penetrate the material.

NOTE:

Information on muzzle loading ranges can be obtained from the National Muzzle Loading Rifle Association, P.O. Box 67, Friendship, Indiana 47021.

Information on conventional rifle and pistol ranges can be obtained from the National Rifle Association, Range Division, 11250 Waples Mill Road, Fairfax, Virginia 22030-9400/