

Air Rifle Safety Plan & Procedures

Updated Oct 18, 2024

Risks

Indirect Fire

BB impact after ricochet.

Hazard	Significant (3)
Exposure	Significant (3)
Risk	Most Significant (9)

Direct Fire

BB impact directly from the barrel of the rifle.

Hazard	Most Significant (4)
Exposure	Medium (2)
Risk	Significant (8)

Compressed Gasses

CO2 gas cartridge at nearly 1000 psi

Hazard	Medium (2)
Exposure	Low (1)
Risk	Low (2)

Sharp Objects

Potentially created by BB contact with fragile items

Hazard	Low (1)
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Exposure	Low (1)
Risk	Low (1)

Mitigations

Engineering Controls

Soft Capture Backstop

Decelerate the BB immediately after it passes through the target, do not provide surface for ricochet. The rifle must always point at the backstop when not safed.

Addresses: Indirect Fire

Administrative Controls

Rifle Safing

Safe the rifle except immediately before, during, and after a test - put the rifle into a state where it is unable to fire in all situations except directly before, during, and after a test. This means removing the magazine. When the rifle is not safed, no one is allowed in front of the barrel.

Addresses: Indirect Fire, Direct Fire

Rifle State Change Callouts

Verbal callout and callback when changing the safety state of the rifle - when the state of the rifle is changed to or from safe, it must be announced by the person making the change and verbally acknowledged by everyone present.

Addresses: Indirect Fire, Direct Fire

High-Pressure Gas Acknowledgement

Inform participants of the presence of high-pressure gas

Addresses: Compressed gasses

Pinch hazard

Separation of Equipment

The magazine, pellets, and rifle are not to be near each other when the equipment is unattended. This ensures that some random person cannot fire the rifle.

Addresses: All

PPE

Safety Glasses/Face Shields

All participants must wear safety glasses or a face shield at all times when the rifle is not safed.

Addresses: Indirect Fire

Heavy Gloves

Note position of heavy gloves before testing - allows safe handling of any sharp objects that may be created

Addresses: Sharp Objects

Procedures

These procedures are presented in checklist form to support the mitigations described above.

Before Setup of Tests Involving Air Rifle

- ☐ All participants receive safety briefing on air rifle test
 - ☐ All Risks are presented and described
 - ☐ **Zero Access to Firing Area** control is explained and acknowledged
 - ☐ **Rifle Safing** control is explained and acknowledged
 - ☐ **Rifle State Change Callouts** control is explained and acknowledged
 - ☐ **High-Pressure Gas** presence is acknowledgement
 - ☐ **Heavy Gloves** location is described
 - ☐ Safety briefing leader visually confirms that every participant is wearing safety glasses, and informs that they are not to be removed
- ☐ **Soft capture backstop** is installed and verified to be in good condition

The rifle may now be removed from storage and set up

Make it so that there's only one way for it to fire - 3d printed something

Setup of Air Rifle

- ☐ Verbally announce and receive confirmation from each participant that it is now prohibited to pass forward of the barrel of the rifle.
- ☐ Set up the Air Rifle in the test location

May now proceed to testing, repeating the testing procedure as many times as required for the number of tests

Test Involving Air Rifle

- ☐ Verify that the **soft capture backstop** is installed
- ☐ Verify that no one is forward of the barrel of the rifle
- ☐ **Verbally announce and receive acknowledgement from everyone present that you are arming the rifle**
- ☐ Arm the rifle
- ☐ Perform the test
- ☐ Disarm the rifle
- ☐ **Verbally announce and receive acknowledgement from everyone present that the rifle is disarmed**

Once tests are completed, the rifle can be stored

Storing the Air Rifle

- ☐ Store the rifle in its storage location
- ☐ Verbally announce and receive confirmation from each participant that the rifle has been stored and they can now move freely

After Tests Involving Air Rifle

- ☐ Remove and inspect the **Soft Capture Backstop**
- ☐ If any safety incidents occurred, after the first test, or after major changes to the test procedure, conduct a safety debriefing and modify the safety plan and procedures as necessary.

Power off before removing magazine