MODULE 4

Deterrents

4.3.1 – Rubber Projectiles
POLAR BEAR DETERRENTS

Power Point: A4.3 PPT - Direct Contact Deterrents

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<td>2</td>
<td>Photo of rubber projectiles w/ intent and warning</td>
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Props:

- Examples of rubber projectiles

CRITICAL:
No live cartridges in classroom! Dummy Rounds Only.

Trainer Notes:

- Due to several cases of bear injury from fin-stabilized rubber projectiles, the Alaskan Departments of Fish and Game grizzly bear project office in the North Slope recommends the use of the Fiocchi rubber baton (hourglass shaped).
- Likewise, wildlife agencies in the three northern Territories of Canada no longer use the fin-stabilized rubber projectiles and only recommend the use of the Fiocchi round.
- No known polar bear injuries, as a result of fin-stabilized rubber projectiles, have been documented in Alaska. Nevertheless, the U.S. Fish and Wildlife Service recommends the use of the Fiocchi rubber baton.
4.3.1 DIRECT CONTACT RUBBER PROJECTILES

Often called rubber bullets, these projectiles were originally developed as a human crowd control device. Wildlife managers have found them to be a very effective mid-range bear deterrent. The two most common designs are the hourglass shaped rubber baton and a torpedo shaped fin stabilized rubber rocket.

Capabilities

The rubber projectiles’ capacity to inflict pain without causing significant injury gives bear responders another technique to try scare the bear away. Without this option bear responders might be forced to take lethal action sooner.

Both the hourglass-shaped Fiocchi rubber baton and the torpedo-shaped, fin-stabilized rubber rocket have ranges of 20 yards to 45 yards (60 to 135 feet).

To date the Fiocchi rubber baton has proven to be the safer and more predictable of these two deterrent rounds. The Fiocchi rubber baton remains pliable and retains its mushrooming qualities even at temperatures below freezing.

Limitations

At ranges closer than 16 yards (48 feet) rubber projectiles can cause serious injury. A strike to the bear’s chest or stomach area at close range can be lethal.

The fin-stabilized rubber projectile can become very hard at temperatures below freezing. This increases the potential of hide penetration and injury of bears.
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<td>List of things to consider before firing</td>
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<td>4</td>
<td>Picture of break-action shotgun and open action</td>
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Props:

Trainer Notes:
Most bears are inherently wary of new situations, especially when there are humans involved. Hazing relies on this inherent wariness and the ability for us to use technology to extend our dominance. Once a bear has had a negative experience with hazing, it not only may remember the original incident but also may anticipate that things could get worse.

Specialized launchers designed to fire large 1.5 inch by 4 inch rubber batons have proven very effective for deterring polar bears. However their use is restricted to police and wildlife agency use only; thus these are not available to most bear responders.
Considerations

The effective and close range distances of rubber projectiles vary based on a number of factors that must be considered prior to firing at a bear. Careful consideration will decrease the likelihood of injury or death to the bear. These include:

- Air temperature - freezing temperatures can cause rubber to be less pliable, increasing the potential for injury at close range. Cold dense air can also decrease the effective range of the projectile.
- Wind speed and direction - shooting into the wind may reduce the effective range of a rubber projectile and a crosswind can blow it off course.
- The size of the bear - bigger bears are better able to absorb the impact of a projectile than smaller bears.
- The condition of the bear - a sick or thin bear has less shock absorbing body fat and is more prone to injury.

The low powder loads of rubber projectiles can cause them to lodge in the barrel. After each round of shots, the barrels should be inspected. Therefore, it is advised that a single or double barrel break-action shotgun is used to fire rubber projectiles, as inspection of the barrels is easier with a break-action as compared to other shotgun actions.

Bear responders using a 12-gauge break-action shotgun to fire deterrent rounds must be backed-up by a person with a firearm loaded with lethal rounds.

Direct contact projectiles must not be used in semi-automatic shotguns.

The low powder loads in these rounds do not produce enough pressure to properly work the action. Rounds can get jammed in the action rendering the firearm useless.
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<td>Pump-action loading consideration drawings</td>
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<td>6</td>
<td>Prior to firing points</td>
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Props:
- 12-gauge pump-action shotgun
- 12-gauge dummy rounds

CRITICAL:
No live cartridges in classroom! Dummy Rounds Only.
If no “dummy” rounds are available for the shotgun the demonstration of proper loading procedures will only be done at the live fire exercise.

Trainer Notes:

How Deterrence Works
- **STARTLE RESPONSE**: interrupt behavior, identify human presence
- **INFLICT PAIN**: fear, “dominance from afar,” define your own personal space
- **ANTICIPATION**: threat of additional consequences
When firing rubber projectiles from a 12-gauge pump action shotgun always…

- Load rubber projectiles directly into the chamber of the shotgun via the ejection port, never into the magazine.

- Fully load the magazine with lead slugs so that you are prepared if a bear attacks.

Prior to firing a rubber projectile the shooter must:

- Have an experienced person with a loaded firearm as backup.
- Determine what they want the bear to do.
- Make sure the bear has a clear and obvious path of escape.
- Let the bear know their location before firing.
- Take care not to startle a bear at close range.
- Aim at the large muscle mass of the bear’s rump (see diagram following page).
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<tr>
<td>7</td>
<td>Rubber projectile shot placement diagram with shooting stance</td>
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Props:

Trainer Notes:

- The target area on the bear’s body for rubber projectiles and beanbag projectiles are the same.
- Depending on the bear’s body orientation, the target area for direct contact projectiles can be very small. Accurate aiming is critical to prevent injury to the bear from a misplaced shot.
- Patience is critical. The shooter must wait for the bear to present a broadside or rear target area before firing.
The size of the shot placement (target) area changes with the orientation of the bear. A bear facing away from the shooter provides the largest target area while a bear approaching directly towards the shooter presents the smallest target area. Direct contact deterrents **are not** to be fired at a bear facing directly towards the shooter or that is running away.

Hitting the relatively small target areas with single projectile deterrent rounds requires that they be accurately aimed using the same techniques required for accurate rifle shooting. To increase accuracy when firing single projectiles from a 12-gauge shotgun, it should be equipped with a front sight and an adjustable rear sight.

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**Module 4**  
4.3.1 Rubber Projectiles  
US Fish and Wildlife Service - Alaska  
June 30, 2015
### POLAR BEAR DETERRENTS

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<td>Remington 870 with sight equipped barrel and Stoeger Double Defender shotgun</td>
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<td>9</td>
<td>Rear sight placement considerations w/ illustration</td>
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**Props:**

**Trainer Notes:**
Some manufactures make shotguns specifically for wildlife and tactical defense purposes. These come equipped with front and rear sights mounted on the barrels. Two examples are shown below.

![Rear adjustable sight and Front sight](image1.jpg)

**Remington 870 Pump-Action with slug barrel**

![Rail for attaching rear sights and Fiber optic sight](image2.jpg)

**Stoeger Double Defender**

**Break-action double barrel 12-gauge shotgun**

Sight manufactures offer many sight system options to help improve accuracy. These range from simple double-bead systems to high-end fiber optical systems. When choosing a sight system remember that shotguns used for bear deterrence can be subjected to a lot of rough handling; the system chosen must be up to the task. A qualified gunsmith can add an appropriate sight system to any shotgun.

Placement of the rear sight is important in improving accuracy. As a general rule of thumb, the greater the distance between the front and rear sight the more accurately the shotgun can be aimed. As well the closer the rear sight is to the shooter’s eye, the easier it is for the shooter to achieve proper sight alignment. (See diagram on following page for example of rear sight placement.)
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<td>9</td>
<td>Rear sight placement considerations <em>with illustration and Ghost ring sight illustrations</em></td>
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<tr>
<td>10</td>
<td>Photo of people practicing</td>
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Props:

Trainer Notes:
Bear responders are frequently working under poor lighting conditions and must choose a sight system that works well in low light situations.

Some firearm experts recommend the use of a receiver mounted ghost ring sight system to meet the challenges of low light levels. Ghost ring sights consist of a post near the front of the shotgun and a large aperture (hollow ring) near the rear of the gun. Metal wings protect the sights from being bumped out of alignment.

Because the human eye naturally wants to center the post in the ring, this makes aiming easier and more accurate than the front bead or open sights found on most shotguns. With the rear sight close to the shooters eye, it is easier for them to quickly acquire the target under low light conditions.

**Practice, Practice, Practice**

While sights are an important aid to the shooter, shooter accuracy depends more on taking time to learn the proper sight picture and properly sighting-in the shotgun. The key to accuracy is practice.