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The Bailey Beaver Trap: Modifications and Sets to Improve Capture Rate

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ABSTRACT: The Bailey beaver trap is a suitcase-type beaver trap manufactured by the Tomahawk Live Trap Company. Although an effective tool in capturing beaver, it is known for its high misfire rate. This paper explains and expands upon Richard Buech's tips for modifying and employing the Bailey beaver trap, which can reduce the misfire rate by 50%.

KEY WORDS: animal welfare, beaver, *Castor canadensis*, control, live trap, trap modification, trapping techniques, vertebrate pest control

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INTRODUCTION

With misfires reaching as high as 50%, it is little wonder that the Bailey beaver trap¹ has a dismal reputation (Buech 1983). Fortunately, Richard Buech discovered several modifications that substantially improved the Bailey's capture efficiency. This paper explains his findings and offers further suggestions to improve the trap's capture success. The author believes that the Bailey trap, when properly modified and used, offers the beaver trapper some excellent advantages over other suitcase style traps (Vantassel 1998). First, the Bailey trap is set completely underwater, thereby substantially reducing beaver avoidance of the trap. Second, the trap can be employed in blind sets (sets without using bait) by exploiting normal beaver behavior. Third, the trap uses weaker springs, making it safer for the trapper to use.

SUGGESTED TRAP MODIFICATIONS, IN ORDER OF IMPORTANCE

Install Modified Trigger Locks

Buech discovered that the standard locks occasionally jam, allowing the trapped beaver to pry the jaws open and escape. This problem generally occurs when the jaws don't meet with sufficient force or simultaneously at the proper point.

Buech developed a lock that essentially eliminated the jamming problem. He began by flattening out the standard lock and then welding a piece of steel to the end at a 45° angle. This new lock is reattached to the trap with the original cotter pin. He states that the spring is no longer necessary for the new lock to function properly. The length of the new trap lock, from bend to point of weld, is 5¾ inches (11.7 cm), and the length of the welded piece is about 2 inches (5 cm) (Figure 1 a,b).

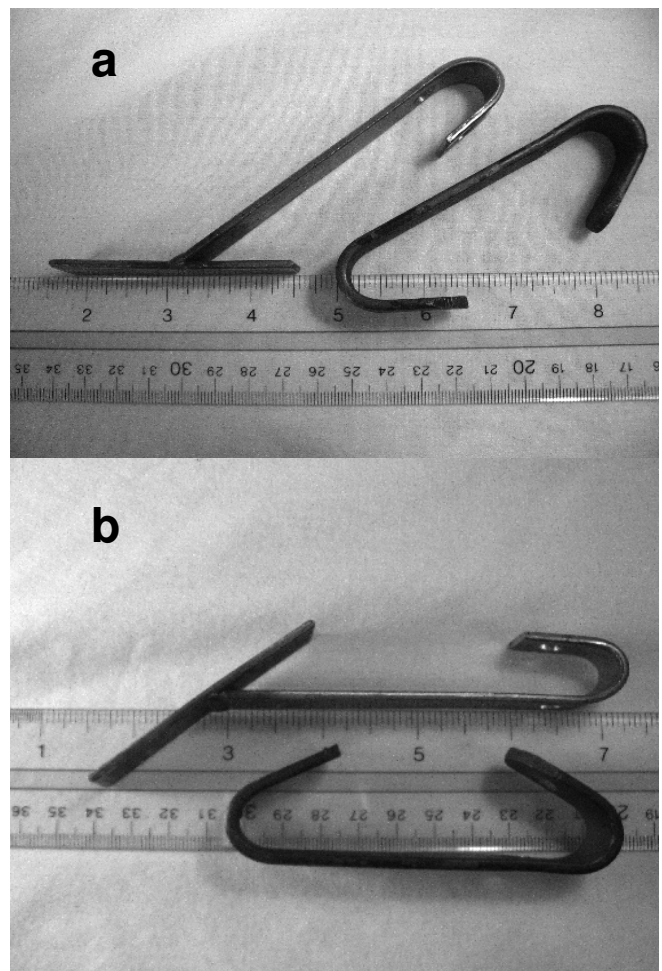


Figure 1. a: Modified lock on the left; b: Modified lock on top, compared to standard lock.

¹The official name of the trap is the "Tomahawk Bailey Beaver Live Trap." The author has redacted the name, because he considers the term "live trap" to be too vague and emotionally misleading for professionals to use. Professionals realize that there are many kinds of "live traps," including footholds, snares, pit traps, and cage or solid-wall traps. Professionals also know that "live traps" can be incredibly cruel and lead to the death of the captured animal. Therefore, the author suggests that professionals should refrain from calling cage, box, and suitcase style traps "live traps," to avoid reinforcing the public's misconception that non-cage traps necessarily "kill." If professionals ever hope to truly educate the public about trapping, then it is incumbent upon them to use language that doesn't reinforce wrong stereotypes. One need only look at the mess caused by uneducated Massachusetts voters in 1996 to see a living demonstration of this point.

Shorten and Even Cable Lengths

Since the Bailey has two moving jaws, it is imperative that both jaws fire and meet simultaneously in order to capture the beaver. If one jaw doesn't fire or if both jaws don't meet synchronously, then the beaver will have a greater opportunity to escape. To correct the problem of uneven closing jaws, do the following:

- Set the trap properly and remove excessive slack in the trigger cables. This modification will reduce the hesitation to the trap's firing when tripped. Leave a little slack before making final corrections, as you can always shorten the cable further if necessary after testing in the next step. As the saying goes, "measure twice and cut once" (Figure 2).
- Dry fire the trap to ensure that your changes allow the jaws to meet above the middle of the trap at the same time. Adjust the cable as needed to be sure this occurs.

Optional: File down or tape the cable loop tail so that it cannot become snagged on the mesh, thereby preventing the trap jaw from firing.

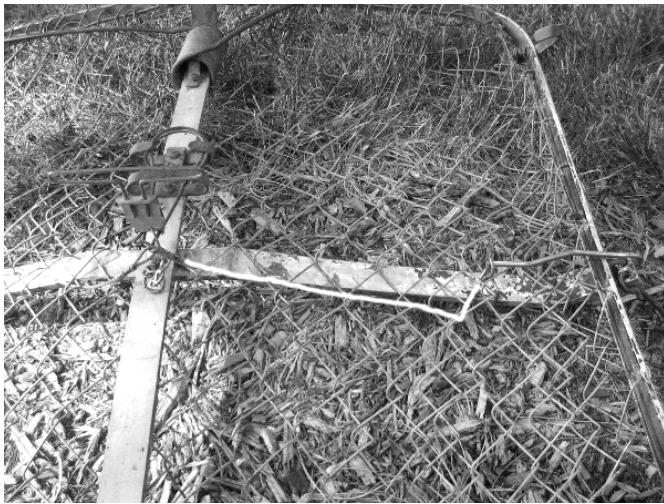


Figure 2. Remove slack from the trigger cable; slack in the cable is shown in the photo by the drawn white line.



Figure 3. Center trigger cable hook on the eye: attach the cable wire to the center of the dog so that it is pulled squarely when the trap fires.

Center the Cable Wire

The cable wire is normally attached to the ring, thereby running the risk of the dog being pulled off kilter. Attach the cable wire to the center of the dog, so that it is pulled squarely when the trap fires (Figure 3).

SETS FOR THE BAILEY BEAVER TRAP

General Considerations

1. Avoid channel sets or locations where the beaver will be swimming at increased speed. The Bailey must be used in locations that require the beaver to slow down, as the jaws close too slowly to catch a swimming beaver.
2. The trap must be completely submerged, with the trigger no more than 4 inches below the water surface. The trap is still effective when not perfectly horizontal. The author has used the trap on beaver dams where the trap lay at a 30° angle with no problem.
3. The trap must be tethered with a wire (16 gauge, minimum), or a captured beaver will drag the trap to deep water and drown.
4. The trap must be used in open (not frozen) water.
5. The trap must be positioned so that the beaver moves between the jaws (i.e., perpendicular to the trigger), not over the side of the jaws where the locks are.
6. Trap dogs must be set in their respective loops so they will fire easily when the trap is triggered. Typically, the dog should extend through the loop no more than ¼ inch.

Tree Set

1. Find a tree on the bank that has been gnawed on by beaver.
2. Place some dead tree branches on both sides of the trap to help guide the beaver toward the center of the trap. Make sure branches will not interfere with trap action.

Dam Set

1. Stand in one spot on the dam to allow the water to begin to flow over that spot. Water should be flowing freely but without a rush. A water flow of 2 inches in depth and 4 inches in width should be sufficient. If a thin sheet of ice forms overnight, slightly increase the depth and width of the breach to prevent ice forming near the trap.
2. Set the trap in the same manner as you would for the tree set.
Note: Disturbing a beaver dam is illegal in some states.

Food or Castor Set

1. Find a suitable bank location and create a food or castor set.
2. Set the trap in same manner as you would for the tree set.

COSTS AND AVAILABILITY

Bailey Beaver Traps are available from Tomahawk Live Trap, P. O. Box 323, Tomahawk, WI 54487 (<http://>

www.livetraps.com). Currently, the price is \$379.00 each plus S&H. Discounts are available for quantity purchases.

HUMANE ISSUES

Dr. Buech also has advice on how to use the Bailey and Hancock traps in a humane manner. First, it should be known that beavers regulate their body temperatures through their tails. They don't pant or sweat like other animals. He strongly recommends that traps be checked in the morning, so that the beaver will most likely be in the trap less than 12 hours. He noted that during the whole time he was trapping for his doctoral thesis, captured beavers rarely maintained a normal body temperature of 98°F. Most often their temperature ranged from 85-95°F. He strongly suggests that Bailey traps not be used when temperatures hover around freezing or below (32°F.). He notes that beavers in Bailey traps are unable to maintain body temperature, since they are being held in the water. Buech advises that if you must trap with the Bailey during freezing conditions, check the traps at midnight and in the early morning. Otherwise, he recommends using Hancock-style traps during cold weather conditions, as Hancocks lift the beaver out of the cold water. Some physical characteristics of the Hancock and Bailey traps are compared in Table 1.

When trapping during hot weather, be sure to avoid having the trapped beaver overheat. Beavers can overheat very quickly if they cannot reach water. During summer months, the Bailey trap is a better choice, as it keeps the beaver in the water. If you must use Hancock traps, set them in areas where the beaver will be shielded from direct sunlight.

If you are unsure whether a beaver is overheating or not, feel its tail. If it feels cold, then the beaver is cold; if it is warm, then the beaver is warm.

LITERATURE CITED

BUECH, R. 1983. Modification of the Bailey live trap for beaver. *Wildl. Soc. Bull.* 11(1):66-68.
 VANTASSEL, S. 1998. Modifying the Bailey beaver trap. *Wildlife Control Technology Magazine* (Sept/Oct issue) 5(5):14-16.

Table 1. A comparison of some of the characteristics of each of these two common cage traps for beaver.

Hancock Trap	Bailey Trap
Clam shell "suitcase" design	Clam shell "suitcase" design
One jaw moves	Two jaws move
One jaw stands outside of the water	Both jaws lay beneath the water surface
Lacks safety lock on jaw	Has safety locks for both jaws
Powerful springs to scoop beaver out of the water	Less powerful springs; beaver remains in water
Must be used in open water	Must be used in open water