

Wildlife Materials International, Inc.

TRANSMITTER USAGE for ANIMALS

Directions:

1. To locate an animal, the caretaker needs a **receiver** to pick up the transmitter wearer's signal, an **antenna** attached to the receiver to directionalize and magnify that signal, and a beeping **transmitter** (with its own tiny antenna) attached to the animal by collar, harness, or surgical implant.
2. In order **to activate a transmitter**, remove the magnet that has been taped or held by elastic band to the recess of the transmitter casing; the transmitter will begin sending signals and is now ready to test or to attach to an animal. After the transmitter has been used, **deactivate** it by placing the magnet in the recess and securing it firmly in place; check to make sure the transmitter collar signal is no longer being picked up on your receiver. Occasionally, two magnets and stronger pressure on the recess are required to stop the signal. This process will conserve the battery's energy while the transmitter is stored.
3. Each animal's transmitter has been assigned, at the time of manufacture, a **frequency** over which that specific electronic signal can be heard. Note that a tag with frequency number has been attached to each transmitter. Before operation, the caretaker must program each animal's frequency number into the receiver by push button or slide switch; punch in the last three digits of the frequency. Occasionally the transmitter's given frequency will vary by 1 to 3 kHz; this means that the operator may need to change the last frequency digit up or down by 1 to 3 numbers. Adjust the receiver's fine tune control; clarity of signal will tell the operator that the frequency is correct.
4. **To test the transmitter**, remove the magnet to start signal transmission. Then place the transmitter at a known location, say, 200 yards away. Fit the Yagi directional antenna plug into the antenna jack of the receiver and turn it on. Tune the receiver to pick up the transmitter signal. Notice that the transmitter signal becomes louder as you move toward its location. Practice with the equipment, placing the transmitter at a greater distance each time; get comfortable with the workings of electronic equipment before attaching the transmitter to an animal.
5. **The best signal reception will occur** when the operator **holds the Yagi directional antenna with its main boom parallel to the ground**; this means that the antenna's three elements will be held vertical to the ground. The rule of thumb is that the operator's antenna **elements should match** the positioning of the animal's tiny transmitter antenna. Ordinarily, a transmitter wearer's antenna will be positioned vertically. However, if an animal's transmitter has been surgically implanted, with its antenna lying horizontal in the peritoneum, the caretaker should also hold his or her antenna with the elements horizontal.
6. In order to pick up the transmitter signal, the caretaker **rotates the directional antenna**, mounted on a pistol-grip handle, **in a 360 degree arc above his or her head**. The receiver will tune in the transmitter's beeping signal; at its loudest or peak, the signal indicates the direction in which the animal has gone. To insure that you know the direction the transmitter wearer has taken, rotate the Yagi antenna 180 degrees once again; no signal or a faint signal will verify that the patient has gone in the opposite direction.
7. When operating a directional antenna outside, the caretaker can pinpoint an animal's signal most accurately by using the **null-to-null method**.

Since a signal beeps loudest over 15 to 20 degrees of an antenna's arc, the caretaker will find nulls or no-sound points on both sides (at 35 to 45 degrees) of that peak signal. Then divide the distance between each null by two, thus obtaining the most exact location of the animal's signal.

8. When battery energy has depleted, the signal will fade. If your transmitter requires battery replacement, return your transmitter to Wildlife Materials Int. with a written statement about your needs. The battery replacement will usually take about 2 weeks time; during our peak period during the fall, turnaround time will be longer. An alternate transmitter will insure continued monitoring during this period.
9. Practicality determines the range over which a animal's signal can be heard; usually, a light-weight transmitter designed for wearing comfort is the significant factor. An industry rule-of-thumb is that no animal should wear a transmitter weighing more than 4% of its total body weight.

An animal's signal may be tracked over a line-of-sight or clear range of up-to-several miles. When a transmitter-wearer moves through thick brush or around high buildings, the beeping signal will be heard over a shorter distance. Of course, an advantage of this electronic monitoring system is that, as the animal moves away, the caretaker can follow.

10. When the transmitter is not being used, stop its electronic signal by securing a magnet in the recess at the front. If the transmitter signal does not turn off immediately, try moving the magnet to the right or left, backward or forward, until the transmitter deactivates. No pulse or constant tone should be heard. **Use your receiver to check and make sure the transmitter signal has stopped and is not draining the battery.** Because the magnet is easy to lose in the field and difficult to purchase elsewhere, we suggest that you keep others on hand for battery conservation.
11. STORE the TRANSMITTER IN A COOL PLACE. If two or more transmitters are stored together, one magnet may touch another and cancel its turn-off capacity. Thus, storage with space between transmitters will help conserve battery energy.
12. If long-term storage is anticipated, **exercise a sealed lithium battery** by removing the magnet for 8-10 hours each month. This will avoid "lithium barrier" and help maintain proper battery condition.

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