

Telemetry Mounting Techniques in a Show Setting

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There has been a lot of discussion lately in the falconry community about the most effective and safest ways of mounting telemetry on birds of prey. In a show setting, we attach telemetry to our birds using the same methods that a falconer would, but there are some different considerations when mounting telemetry on our birds. Considerations include things such as how visible the telemetry is to the audience, the speed and efficiency at which transmitters can be put on so the show is not affected, and the fact that we often use telemetry on many different types of birds, not just birds of prey. The four main techniques used today for attaching telemetry transmitters are leg mounts, tail mounts, neck mounts and backpacks. Each of these techniques has pros and cons that each facility must consider when choosing which technique will be the most effective with their birds and in their shows.

Leg Mount

The leg mount is probably the most widely used method of attaching telemetry in our field. It is usually attached to the leg by means of a leather strap called a bewit, or simply by using a zip tie through the grommet on the anklet. The advantages of this mount are that it is usually very quick and easy to attach, the leg is a more natural place for a bird to carry weight compared to the other telemetry mounts, and it has been used with success much longer than the other mounts. However, there are several disadvantages of the leg mount. Safety should be considered first. Leg mount antennas hang down when a bird is perched and can run the risk electrocution if a bird was to land on a power pole. Many birds have been killed or injured this way and this risk may be higher for show birds, due to the fact that many of our shows are located in urban areas. Another disadvantage is that bird's beaks can easily reach their leg mounts. Several owls that I have worked with would bite off the zip tie and remove the transmitter or the transmitter's antenna if left on the bird for a significant amount of time before flying, forcing us to put on the transmitter just before the birds went on stage. Also, if a leg mounted bird flies off and lands on the ground, the transmitter and antenna would be on the ground which weakens the signal greatly to the point of being nearly non-existent if the antenna is pointing directly at you. Another potential disadvantage, albeit an aesthetic one, is that the leg mount is very visible and exposed. This may or may not be an issue for everyone, but the public will be able to see this "thing" hanging from the bird's leg as it flies inches above their heads. Then, there is also the potential risk of someone in the audience being struck in the face by the transmitter's antenna or a person grabbing the antenna while the bird is in flight. This risk increases when using the extra long antennas found on some of the older transmitters.

Tail Mount

After the leg mount, the tail mount is probably the next most common way of attaching telemetry and one of the most useful when telemetry is needed on species other than raptors. We have put tail mounts on many species aside from raptors with good results. Species include corvids, hornbills, and cranes. Generally, there is a tailpiece that is attached to the shaft of a deck feather in which the transmitter is attached by way of a stiff wire that has hooks on the ends. Tail mounts are often a little more difficult to attach to the bird than the leg mount. First in putting on the tailpiece, glue is used and one could accidentally glue together or break one or more feathers. Secondly, it can be more difficult to put the transmitter on and take it off the bird, necessitating more training of the bird to accept having it's tail manipulated when it cannot as easily keep an eye on what you are doing. This, however, has been made considerably easier with the addition of magnetic switches to some transmitters or the use of long life transmitters that can have a signal for 6 months or more. Both of these options allow transmitters to be left on the bird. The tail mount's main advantage over the leg mount is that the transmitter is higher up on the bird and allows for a much better signal no matter what the position of the bird. Also, by being positioned above the tail, it is harder for the audience to see the transmitter since they usually see the bottom of the flying

bird. Conversely, with the tail mount there is always the risk of a bird getting hung up if it were to fly through some dense foliage or possibly when entering or exiting through a backdrop, pulling out or damaging their deck feather. Additionally, in some cases, a bird simply will not tolerate the transmitter and will pull their own feather out. Many corvids that have not worn telemetry from the time they were young will not get used to a transmitter attached to their tails and will destroy tail feathers while trying to get it off. I have also seen two different falcons, many corvids, and several hornbills consistently take off their transmitters by turning around and unhooking the wire with their beaks.

Neck Mount

A neck mount usually involves attaching the transmitter to a breakaway rubber band. Then, the rubber band is slipped over the bird's head and around its neck with the transmitter hanging down in front of the bird's chest. This style of mounting is not nearly as popular as the two above. In fact, I have not heard of anyone using this mount in a show setting. However, that does not mean it has not been used or is not used on show birds. The neck mount has the advantage of being very quick to put on and take off the bird and positions the transmitter in a way where the signal will be strong in most situations, whether it is in the air, in a tree, or on the ground. Conversely, if the bird bites the rubber band or hooks it with a toenail, it can easily remove the transmitter or become entangled. Also, the transmitter is in plain view of the audience and when attached around the neck, it can give the appearance of being unkind to the bird or again pose the threat of striking people's heads as the bird flies.

Backpack Mount

An old idea that has been mainly used by biologists in the past, the backpack harness, is now being used by many falconers and has the potential of being used effectively in a show setting. The backpack is made up of a small leather or plastic base with a tail mount piece attached to it that sits on the bird's back between the base of the bird's wings. The transmitter then attaches to it exactly like a tail mount. It is held in place by Teflon ribbon that goes over the shoulders, crosses in the front below their crop, and comes up under the wings. Teflon ribbon is non-stick and does not irritate the bird's skin even after flying. Interestingly, several minutes after being put on, the bird preens the ribbon underneath its feathers to where the backpack seemingly disappears to where you cannot visually tell that it is there. I have heard of several falconers that have left a backpack harness on their bird for several years without complications. The backpack mount's main advantage is that it keeps the transmitter up off the ground at an angle and allows for a good signal, similar to the signal from a neck mount. The transmitter on a backpack, though, is up on the bird's back rather than hanging in the front of the bird where it is less likely to hang up on things, such as the ground or an entrance or exit hole. Also, the transmitter is generally much easier to put on the bird than the tail mount and is much less noticeable than the other three mounts when the bird is in flight. This mount is still new to most of us and few have experience putting the harness on properly, which is more difficult than the previous three techniques. If put on incorrectly, the harness can cause problems. For instance, if initially put on too snug, the backpack harness can become far too tight when a bird puts on muscle. Conversely, the backpack harness can become too loose if put on a heavy bird that is losing weight. I have seen a harness that was too loose on a bird. The transmitter bounced up and down on the bird's back, which caused irregularities in the bird's flight and had the potential of getting caught on something. Also, some birds will not tolerate this method of mounting telemetry on them and will constantly pull at the Teflon, necessitating the need to remove the harness. This seems to be a slightly more common problem with the backpack than the other methods of mounting telemetry. With more experience using this technique in the future, many of the potential problems will get worked out, and I can see it becoming safer and effectively used in a show setting.

Telemetry mounting methods were originally developed by biologists and falconers with their own needs in mind. When brought into a show setting many of these original considerations remain the same, but there are a number of other advantages and disadvantages that we must consider with our show birds depending upon the situations in which they are used. As long as the safety of the birds is considered, first and foremost, all these methods have

been proven and are acceptable when used correctly. It is ultimately up to each facility to decide which method will work best for them, based on the experience and skill of their trainers, their birds, and their show needs and settings.