This Operator’s Manual provides the necessary information on safety, maintenance, and operation of the Fly Away™ Laser.

The Fly Away™ Laser is a hand-held laser device that provides a convenient, effective, and humane approach for driving birds away from areas where they are not wanted.

Fly Away™ Laser Safety Summary

The U.S. Food and Drug Administration (FDA) has classified the Fly Away™ Laser as a 3B laser, (CFR) 21 subchapter J, and has approved its use without requiring a permit or license.

It is important to understand that, although the Fly Away™ Laser is a powerful laser, it is unlike most other lasers due to its very diffuse or un-concentrated beam. This is because the Fly Away™ Laser must make a large enough beam, at a relatively short distance, to assure that targeted birds cannot ignore it. Most lasers of this power would claim an effective range of many miles with a highly concentrated beam, but we claim only an effective range of 1 mile because of the optics used to diffuse the beam and create a larger, more useful “spot” for scaring birds away.

Risk to humans (there is no risk for any birds targeted with the laser) is from laser radiation to the eyes and does pose a risk of burning the retinas under certain conditions. This risk is defined (through ANSI standards) as the “nominal hazard zone.” For the Fly Away™ Laser, the nominal hazard zone is 30 yards.

The nominal hazard zone, in simple terms, means this:

Within the zone (e.g. closer than 30 yards) you would have to shine the Fly Away™ Laser directly into someone eyes for longer than 10 seconds without interruption and without that person blinking. This means that if the laser were accidentally shown in someone’s eyes for longer than 10 seconds (no small feat at 30 yards or more) and that person blinked during the 10 second period there would still be no eye damage. Were they not to blink however, there would be a risk of some burning of the retinas. This would be extremely difficult to accomplish because of the involuntary “blink response” all humans have.
In summary - the eye risk to humans, while present, is remote and would almost certainly require intentional mis-use to cause harm.

**However – you should never intentionally point the Fly Away™ Laser at another human, especially those wearing vision enhancement devices.**

**Operating the Fly Away™ Laser**

Before we start there is something you need to know – Birds are highly adaptive and occasionally cunning. Don't waste your time by mistaking birds as “dumb animals” you can easily manipulate. We have a video of a small bird that hovers in front of an entry door at a retail store in just the right position to trigger the automatic door opening. The bird waits for the door to open and then flies in.

First, you should know that it is not the beam from the laser that the birds are frightened of; it is the “spot” or circle that is reflected off the ground, water, foliage etc. that frightens them.

It is not necessary to cause the spot/circle to “hit” the targeted birds. Simply having the spot/circle reflect in their general direction is enough to cause most birds to fly away very quickly.

The Fly Away™ laser requires enough contrast between the laser spot and the ambient light for the birds to notice it and be effective. For this reason most effective use of the laser is between dusk and dawn. Since roosting of the unwanted birds is the most common problem, this limitation is usually not an issue. The Fly Away™ laser is effective from about 45 minutes before sunset to about 1 hour after sunrise. On cloudy days the laser can often be used all day.

**Birds in warehouses/garages/hangars**

Before staring you must establish a clearly visible escape path for the birds (open bay door normally) and plan how you intend to drive them there. Even if you plan to use mist nets to capture the birds you need to determine the route before you start. Without a clearly visible escape path the birds will either fly in small circles or refuse to leave the perch altogether. For example, if you shine the laser into a nook directly instead of from an angle, the bird will assume that there is no path of escape and wait for the predator (the laser) to attack before taking evasive action.

- **Buildings the size of a hanger and smaller**
  Make sure the pocket doors are open (both ends are OK). Start at one end. Point the laser up where the birds are perched and when they flush into the air, use the beam to “herd” them towards the opposite end and open door. Once this is started other birds in the area will also flush, so make sure to drive them towards the other door as well. Repeat while looking for birds that hide up in the pocket door overhead roller cutouts. If many birds are in the building you won’t have time to look for hidden birds on the first pass.

- **Large warehouses and hangars**
  Operation is similar to smaller buildings with one important difference. Many species of birds tend to fly in circles when panicked so you will need at least one other person to help keep the birds in front of you and “herded” towards the clearly visible escape path you have set for them. If you allow the birds to circle behind you they may assume that they have avoided the predator and return to their perch. It is best to start on wide side of the building that is farthest from the escape door and work your way towards the light from the door. The additional person can create loud noises (banging pots and pans, small sections of 2x4 lumber, etc.), or they can have a second Fly Away laser.
Smaller buildings should be complete in 10-15 minutes; larger buildings could take as much as ½ hour depending on size. The time required can also be impacted on how many places a bird can hide because you must make sure they are all out.

**Birds on the ground or in water**

- Closer than 200 yards -  
  With the laser on, point the laser down so that the beam spot reflection is visible to you. Then move the spot towards the targeted birds in short erratic movements with pauses that would tend to mimic the movements of a predator. Repeat as needed.

- 200 yards are more away -  
  With the laser on, target the beam spot reflection to either the left or right of the flock at a level that puts the beam shining directly on the flock as it moves towards them. Once positioned, slowly start moving the beam spot reflection in the direction of the birds. This is done to give the birds time to notice the laser and react to it. Repeat as needed.

**Birds in trees or perched in other high places**

Power the laser up and direct the beam spot reflection to an area just below where the birds are concentrated. Then slowly move the laser from left to right moving the beam spot up slightly after each pass is made until the beam spot has reached the uppermost area that is or was affected. Repeat as needed.

**Large areas and multiple bodies of water**

Care must be taken here that the birds aren’t simply driven to another nearby area from which they will shortly return (15 to 30 minutes).

It is important to understand that, often, birds roosting in different nearby areas (within a block or two) consider the entire area one, single roost. This means the entire “roost area” must be cleared for effective bird control.

As an example – the USDA/Wildlife Service office in St. Louis, MO was attempting to control about 30,000 crows in a twenty-block area downtown using four lasers. At first, they were driving the crows from areas where they were perched only to have them return after a short time (sometimes as little as 15 minutes). Once they realized what was occurring, (the Crows saw the entire 20 block area as a common roost) they went to the tallest buildings in that area and trained the lasers down onto the roosting crows, leaving them no place within the roost area to comfortably escape. This approach reduced the population to a few hundred within a short period of time. This phenomenon is especially true with Canada Geese and nearby lakes.

**General Rules**

Ideally, this work should begin at dusk so that you can attack the birds just as they come into roost – this is when they are the most vulnerable to the laser (or any other method of bird control).

The total time required to clear the area of birds will depend upon how large an area is covered and the topology of the affected area, (e.g. an electric power plant has many nooks and crannies for birds to hide in) but usually no more than an hour is needed the first night with subsequent nights taking less time. During this time you should carefully inspect to make sure that all birds have departed. Any birds left in the roost will be a powerful attractant to cause the other birds to return. Most of this hour will be spent on searching the area to make sure all the birds are gone.
If there is much Guano (bird dung) present it will act as a powerful attractant to other birds, it will need to be cleaned away.

Follow-up

Once the birds are driven away for the night, they normally will not return. Re-introducing the laser to the roost over the next three to five nights will usually cause the targeted birds to abandon the roost for another area.

This scenario can be negatively affected if the targeted birds perceive that no adequate alternate roosting and/or food sources are available. While the laser will still move the birds it may take several weeks to force them to another roost completely.

If the birds have been roosting at this location for several years it is probable that they have no alternative roosting site selected. These birds will be difficult to remove because they, quite literally, don’t know where else to go. It will require a determined harassment regimen over many nights (possibly as long as 60 days) to force the birds to find an alternative roost.

Many species (e.g. Canada Geese, Starlings, Grackles) have a very structured hierarchy within the flock and these species will send their scouts back periodically to see if the roost is OK now. Re-introducing the laser to these scouts will prevent the flock from returning.

Things you should know about bird control:

1. Know as much about the species you are attempting to control as possible. For example, the Canada Goose mates in Spring and then molts after the eggs are hatched, a period of eight to ten weeks total. Many geese are willing to die defending their nest, and molt means they lose their feathers making it impossible to fly. Attempting any type of bird control on this species, other than euthanasia, during this time will be futile.
2. Most species of birds travel in flocks. Birds that are not migratory will have more than one roost location selected to give them an alternate place to go if they perceive predator activity at their primary roost. Your location is almost always the primary roost – your job is to convince them that they need to go to their secondary roost.
3. Habitat modification is always the best approach possible for long-term population control. You can get rid of them, but whatever made that roost desirable will continue to attract new flocks until it is modified.
4. Knocking down nests during mating/egg laying time for your species is usually fruitless. Sparrows and starlings have been known to rebuild nests within 30 minutes.
5. Know whether you are targeting nocturnal (able to fly at night – crows, geese, etc.) or diurnal (normally active during the day - pigeons, starlings) birds. It is not unusual for nocturnal birds to roost in one location and forage for food as much as 20 miles away during the day, while diurnal birds tend to roost and forage in the same location or nearby.
6. Diurnal birds usually will not fly at night (this is not always the case with Pigeons). Once they come into the roost, you have about a 1-hour window to move them out. After that, they normally will only hop from spot to spot within the roost.
7. Using more than one approach to controlling the birds is always desirable (e.g. laser with noise) and assures the highest possible success rate.
8. Once the roost is cleared make sure that all Guano (bird dung) is removed/washed away. Large concentrations of Guano act as an attractant to other birds, even other species. The Guano left behind acts as a “road sign” to passing flocks, telling them that safety and a food source are likely.
9. I know this was stated earlier, but it bears repeating - If the birds have been roosting at this location for several years it is probable that they have no alternative roosting site selected. These birds will be difficult to remove because they, quite literally, don’t know where else to go. It will require a determined harassment regimen over many nights (possibly as long as 60 days) to force the birds to find an alternative roost.
Fly Away™ Laser Maintenance

The Fly Away™ Laser is relatively maintenance free, where battery replacement and simple cleaning are the only actions required of the user. There are no user serviceable components inside the device and under no circumstances should the user attempt to gain access to the interior of the device. Doing so will void the warranty. Access to the laser compartment may defeat many of the inherent safety features of the device and could result in exposure of Class 3b laser radiation.

Cleaning the Fly Away™ Laser Lens

It is recommended that care be taken to avoid getting the output lens dirty and to clean it only when necessary. When necessary, clean the lens by gently wiping the outer surface of the lens with a lint-free lens tissue. The Fly Away™ Laser is a delicate optical device and should be handled accordingly. When the Fly Away™ Laser is not in use, it should be stowed in the storage and shipping container provided.

Battery Replacement

The Fly Away™ Laser operates on 2 “D” cell batteries located in the handgrip. Access to the batteries is accommodated through the end cap of the handgrip. To access the battery, unscrew the end cap and replace the batteries – make sure to keep the batteries turned with the positive end (+) towards the front.

Warranty Information

The warrantor will repair or replace this product with new or refurbished parts, free of charge, in the U.S.A., from the date of the original purchase in the event of a defect in materials or workmanship, as follows:

Materials: One (1) year from the date of original purchase.
Labor: One (1) year from the date of the original purchase.
Laser Module: The laser light source is warranted for a period of one (1) year from date of purchase.

This warranty is extended only to the original purchaser. A purchase receipt or other proof of date of original purchase will be required before warranty service is rendered.

This warranty only covers failures due to defects in materials or workmanship, which occur during normal use as described in the Operator’s Manual. This is a precision, delicate optical device, similar to a 35mm single lens reflex camera or a video camera - it should be treated as such, with care and proper handling. Please refer to the Operator's Manual for proper handling instructions. The warranty does not cover damage which occurs in shipment or failures which are caused by products that are not supplied by the warrantor or failures which result from accident, misuse, abuse, neglect, mishandling, alteration, maladjustment of consumer controls, modification, rental use of the product, or service by anyone other than the warrantor. Except for the battery compartment, the unit is sealed and should not be opened by the purchaser. Opening the sealed portions of the Fly Away™ laser will result in voiding of this warranty.
For warranty service, contact your local distributor for a Return Authorization Number, then send the Fly Away™ laser in its original shipping container, postage paid, with a copy of the purchase receipt to the address your distributor provides. All merchandise must be fully insured and have correct postage. The warrantor will not be responsible for improper postage, items lost in shipping, or damage incurred during shipping.

**Limits and Exclusions**

There are no express warranties except as listed above. THE WARRANTOR SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM THE USE OF THIS PRODUCT, OR ARISING OUT OF ANY BREACH OF THIS WARRANTY. ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE LIMITED TO THE APPLICABLE WARRANTY PERIOD SET FORTH ABOVE. Some locations do not allow the exclusion or limitation of incidental or consequential damages, or limitations on how long an implied warranty lasts, so the above exclusions and limitations may not apply to you.

This warranty gives you specific legal rights and you may have other rights which vary from state to state in the USA. If a problem develops with this product during or after the warranty period, please contact your distributor for additional information.