

ABSTRACTS OF PRESENTATIONS

Seeing the Light: A New Aircraft-Based, Non-Lethal Wildlife Deterrence Device

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This presentation discusses an aircraft landing lamp that includes wildlife deterrence capabilities with the landing light function. The PAR 46 design is a replacement design for existing landing lamps and is currently undergoing STC certification and flight tests. UV light is known to play a significant role in avian processing of visual images. The deterrence device uses a flashing, high brightness, monochromatic light-emitting diode (LED) that is spectrally well matched to the ultraviolet (SWS1 cone) absorption spectrum in the avian retina. This light triggers an avoidance response in birds that is believed to be similar to the human experience of solar glare or solar glint. We also discuss reactions of migrating red-tailed hawks to a land-based array of prototype LED devices at a raptor banding station.

Chi square analysis indicated a higher rate of aborted approaches to lure birds at the test site with flashing lights than at a control site with non-operational, mock equipment ($\chi^2 = 23.412$, $df=1$, $p=0.000$). The development of innovative UV-LED deterrent system addresses the need to mitigate aircraft bird strikes.

Naval Air Station Kingsville (NASK) A Concept Reconstruction: a Cultural Change

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A symbiotic relationship usually refers to a relationship between animals or plants that are of different species which usually, but not always, is beneficial to both species. However, this term can also be applied to a cooperative, mutually beneficial relationship between people or groups.

These types of relationships are required during the development and continued operation of a successful BASH program. Within the Navy BASH community a cultural change promoted these types of symbiotic relationships among its federal collaborators, commands, and departments that continues to grow and strengthen. In 2006 the Navy began working with USDA Wildlife Services to coordinate BASH programs at Naval Air Stations Kingsville (NASK) and Corpus Christi. Following on similar efforts in California, Virginia, and Washington a concept reconstruction occurred when the Commander, Navy Installations Command (CNIC) entered into an Interagency Agreement with USDA-WS in 2008. The centralized program now covered work at 18 facilities in 10 states. Thus began the repositioning of concepts that eventually encompassed an entire team of players which was critical for the success of this new Navy BASH program. This cultural change continues to advance when policies at the installation level are complemented and supported at the command level. To highlight the process we will examine how NASK implemented strategies, and used different tools, to promote and maintain BASH program awareness and participation for various departments. A key component to promote and expand BASH program objectives was the implementation of an avian radar system.

Symbiosis between the air station, tenant and wing level command along with regional participation succeeds at maintaining the training mission at the air station. We also will look at how these relationships at the installation and regional level work together to promote this cultural change to achieve a community without boundaries.

Bird Strike Risk Assessment and Risk Advisories Using Avian Radar

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Birds in the vicinity of an airport are a flight safety risk and advanced detection methods such as avian radar are a critical step in evaluating that risk. At any given moment there can be hundreds of birds moving through the airspace, the use of avian radar allows for activity within the entire risk area to be assessed in real time. While assessment of each individual bird track can be useful in strategic planning and analysis of wildlife trends, it is less useful for real time, operational risk management.

Ultimately, airports need to determine the avian activity level at which birds become a significant risk to flight safety and require mitigation, and then establish an appropriate operational response.