

SECTION 2

SALES INFORMATION

Background and Product Testing

BACKGROUND

PRODUCT TESTING

BACKGROUND

Electric bird deterrents have been in use for many years in the U.S., Europe and Australia. However, electric systems have not been used widely in the UK due to the wording of the Wildlife and Countryside Act 1981, which states that 'it is an offence to set in position an electrical device that is calculated to (or in Scotland 'likely to') cause bodily injury to wild birds coming into contact with it.'

AVISHOCK™ Flex-Track has been in use in the U.S. for over 5 years, with no reports of any harm to wildlife. However, to be fully comfortable that AVISHOCK™ meets the UK legal requirements, Sorex Ltd. commissioned the Central Science Laboratory (CSL) to carry out trials. These trials factored in a large margin of safety by testing a 50% overpowered Energiser, a very short length of Flex-Track that would have negligible voltage losses, and in addition the Flex-Track was wetted to increase conductivity to the birds' feet.

CSL concluded that:

“There was no evidence of bodily injury to pigeons or sparrows during the trials.”

“Based on these results it is unlikely that AVISHOCK™ will cause bodily injury to other birds with similar characteristics [in a commercial installation]”.

Sorex' legal advisers confirm that the U.S. experience and the CSL trial is more than sufficient to demonstrate that AVISHOCK™ does not contravene the Wildlife and Countryside Act 1981. In addition the Animal Welfare Act 2006 provides a framework to ensure that protected animals are not subject to unnecessary suffering when their behaviour is being controlled. Electric shocks are a recognised way to manage animals.

Sorex has been in discussion with the following interested organisations regarding the use of AVISHOCK™ for managing urban pest bird problems in the UK.

- > **Natural England**
- > **Scottish Government**
- > **Welsh Assembly**
- > **Northern Ireland Office**
- > **RSPCA**
- > **SSPCA**
- > **RSPB**
- > **HSE**

PRODUCT TESTING

The Risk of Bodily Injury to Birds Landing on AVISHOCK™ Electric Bird Deterrent System

Summary of CSL Report

Introduction

Electric stimuli have been used successfully for many years to contain livestock, and keep out predators or pest animals and birds from designated areas. However, whilst urban birds have been managed overseas using electric deterrents, this technique has not been used widely in the UK due to the Wildlife and Countryside Act 1981.

Section 5(1)(a) of the Act states that it is an offence to set in position a device that causes bodily injury to any wild bird coming into contact with it. Some devices are named, including 'any electrical device for killing, stunning or frightening'. The deterrent tested in this project can be classed as an 'electrical device for... frightening'. Therefore the key focus of these trials was to show that the system will not cause bodily injury to any bird coming into contact with it (target or non-target).

The system tested, AVISHOCK™, is an electrifiable Flex-Track consisting of a pair of parallel stainless steel braids mounted 12mm apart on a PVC base. The Flex-Track is connected to an Energiser in such a way that electricity flows across the braids if they are connected, i.e. when a bird breaches them. The characteristics of the Energiser determine the maximum possible current it could generate, and the size of the current flowing through a bird is limited by the resistance generated by the bird's feet and body. The size of the current determines the intensity of the aversive stimulus (the shock).

The main aim of the trial was to assess the likelihood of AVISHOCK™ causing bodily injury to birds, based on practical tests on feral pigeons (*Columba livia*) and house sparrows (*Passer domesticus*). The two bird species were chosen as potential target species and also to represent two common size groups of possible non-target species.

FIG 1 PIGEON TESTS



FIG 2 SPARROW TESTS



Results

17 shocks were delivered to twelve pigeons. When the Flex-Track was electrified the pigeons spent a median of 1 second on the Flex-Track (range <1 to 4 seconds), whereas visits pre-trial lasted a median of 18 seconds (range 2 to 257 seconds).

14 shocks were caused to six different sparrows. Time spent on the Flex-Track was reduced when the Flex-Track was electrified. The median visit length was 1 second (range <1 to 1 second) when the Flex-Track was electrified, and 14.5 seconds (range 2 to 164 seconds) pre-trial. Sparrows are birds with a highly developed flocking habit, and when one bird flew off, the other birds in the vicinity tended to follow this behaviour. In all cases, the bird on the electrified Flex-Track was the first bird of the colony to fly off.

No evidence of bodily injury was found on any animal during the post-trial vet check and all birds were signed off as healthy by the vet. There was no evidence of sparks having caused localised injury to the feet. All birds were observed to be flying, eating and drinking normally after the trials.

All pigeons preferred the food in the bowls situated next to the perch, to a less favoured food source provided ad lib on the ground away from the electrified perch. They visited the preferred food significantly more often than the food on the ground (mean perch food 35 ± 15 visits, mean floor food 9 ± 4 visits in 70-72 hour pre-trial, $F_{df=1,9}=36.55$, $p < 0.001$). In the monitoring period after the trial, when power to the track was turned off, all animals tended to reduce their visits to the perch.

This reduced the number of visits to the perch, both for feeding and resting (analysed together: mean visits to perch pre-trial 166 ± 131 , mean visits to perch post 48 ± 25 , $F_{df=1,9}=31.24$, $p < 0.001$). This was consistent for all pigeons. This provides some indication that the shock was perceived as aversive.

Discussion

The aim of this study was to assess the risk of bodily injury to birds landing on AVISHOCK™ electric Flex-Track. No bodily injury was found on twelve pigeons receiving one to three shocks each, and to six sparrows, some of which received up to five shocks each. Sparks were seen occasionally. The veterinary checks reported that the sparks did not appear to have caused local injury to the birds.

There was evidence of a deterrent effect of the shock to the pigeons, based on the significantly lower number of visits to the (un-electrified) Flex-Track after the trial.

Conclusion

Based on these results it is unlikely that AVISHOCK™ will cause bodily injury to either the test species or other birds with similar characteristics.

All pigeons reduced their number of visits to the electrifiable Flex-Track in the 70-72 hours after the trial, (indicating an ongoing deterrent effect of the AVISHOCK™).