BIO-ACOUSTIC BIRD SCARERS (DISTRESS CALL)

SPECIFICATION, INSTALLATION & GUIDANCE NOTES

EnviroGuard
BIRD PROOFING • DESIGN • INSTALLATION

APPROVED AGENTS FOR

SCARECROW
BIO-ACOUSTIC SYSTEMS
KEEPING BIRDS AT BAY

BIRD-X
UK & IRELAND

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1. BASIC PRINCIPALS

1.1 WHAT IS A DISTRESS CALL? Different species of birds each have their own species-specific language. Just like German, French & English sound very different to one another, so, for example, do Pigeons, Starlings and Herring Gulls,

Within each bird species' language there are a number of distinct phrases or "calls" that can be clearly distinguished between. Each species will have its own unique mating call, territorial call and distress call. The latter call being the bird's equivalent to "HELP", "WATCH OUT" or "S.O.S."

It is the very urgent sounding alarm-call that forms the basis of bio-acoustic distress-call bird scaring. Just as a rabbit thumps it's feet, a cat hisses, or a dog snarls when they sense danger; a bird will put out a distress call to it's fellow flock members to serve as both a warning to flee the danger area and, for certain species, as a cry for help.

1.2 WHAT IS A BIO-ACOUSTIC BIRD SCARER? In the simplest of terms a bio-acoustic bird scarer is an electronic, digitized recording of a distressed pest bird that replays at random intervals over the course of time. It is designed to be heard by the bird and hence to create a sense of danger, alarm and perceived threat to the pest bird, to such an extent that it flees the immediate vicinity of the threat, to what it perceives as a safe distance. This will either be the audible boundary of the distress call, beyond which point it can no longer hear the call and hence will no longer feel threatened; or a high vantage point

significantly above the source of the distress call, where it will feel safe, and from where it can keep a sharp look out for the predator.

However, in the case of a distress call system there is no predator! So why do the birds flee?

1.3 HOW DO THEY WORK? When a bird hears its own species' distress call, and in some instances the distress call of another bird too, it will immediately increase its alertness and will start looking around for the source of the threat. The threat is either going to be a predator stalking another bird as potential prey that has been spotted, or an injured or stressed bird of the same species that has already been attacked.

Most birds will look around for the threat source whilst simultaneously taking to the wing, where they are safe from ground predators. More timid bird species such as pigeons and starlings will normally flee the area immediately when they hear their distress call. Other, bolder birds such as Seagulls and Crows will attempt to find the source of the distress call and mob-attack the predator in an attempt to overwhelm it in great numbers and drive it away from their territory.

Whether immediately fleeing, or circling looking for the trouble spot; all birds will start to climb in altitude when they hear their distress call. This is because the biggest threat of all to pest birds is not on the ground, but in the air in the form of a bird of prey.

Most birds of prey (Hawks, Falcons & Eagles) kill with their talons and not their beaks, which, despite looking fearsome, are only used for pulling apart their prey once caught. A bird of prey's real weapons are its talons and its incredible speed in a dive on to its prey from above. Birds of prey hit their targets with such force that the pest bird will often die instantly of shock. However, those that do not are held firmly in the bird of prey's ratchet-like talons until it lands and devours it. As a result of this style of hunting a pest bird, whether it is a Starling, Crow, Seagull or Feral Pigeon will instantly start to climb in altitude to get above what it perceives to be the danger zone, in this case our speaker from our bio-acoustic deterrent.

Herein lies the secret to the bio-acoustic distress call system's effectiveness. Because the pest birds are unable to locate the source of the call, as it is coming from a speaker, they are unable to get "eyes-on" to their enemy. This creates a sense of anxiety and stress at the thought of becoming the predator's next meal.

Hence even the boldest of birds will flee the area as they become acutely unnerved by the system not presenting a visible threat.

1.4 WHY USE BIRD OF PREY CALLS? Some of our bio-acoustic systems also have recordings of birds-of prey that can be used to increase the realism and fear factor of the distress calls; these can be played in sequence alongside the pest bird's distress call. Predator calls are a useful tool but should never be solely relied upon to clear pest birds as some birds will have never encountered a bird of prey and would not recognize the call. Older more experienced birds would recognize it and it would trigger their alarm call, giving excellent deterrent results.

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2. KEY POINTS TO CONSIDER WHEN SPECIFYING & INSTALLING A BIO-ACOUSTIC SYSTEM

2.1 Distress calls will only work on the species that the call relates to and in some cases (Gull family and Corvid family) some very closely related species. Therefore species identification of the pest bird is an essential starting point. You must play the target birds own distress call.

2.2 Prior to specifying a bio-acoustic distress call system consider whether physical proofing methods would give the results you are looking for as these are always preferable to bio-acoustic scaring systems. Is the building in a good state of repair? Do holes that give birds access to the interior need to be closed-up first? Are doors being left open unnecessarily allowing access? No amount of distress calls can solve a problem resulting from bad housekeeping. Spikes, Post & Wire and netting present an impenetrable physical barrier to the birds and must be considered and discounted prior to opting for a bio-acoustic system. Please call us for details.

2.3 Remove all artificial food sources from the site prior to installing a bio-acoustic system. Pest birds are often attracted to an area due to a food source. This can dilute the effectiveness of any bird control programme, be it physical or bio-acoustic. Stop people actively feeding the birds where possible. Ensure bins and waste compactors etc are kept covered.

2.4 Remove all nest sites on the area to be protected prior to installing a system*. This will reduce the pest bird's desire to return to the site in between call outputs. The nest site should be bagged up and disposed of and then the area thoroughly scrubbed with PX Ornikill™ to disinfect the area and remove the birds own scent which can attract it back to that spot. Further prevention can be gained by spraying the cleaned nest site with Bird Shield™ which is a non-toxic scent aversion spray that birds avoid. Please call us for details on PX Ornikill and Bird Shield which are available from stock. ***Please check with your local council or other governing body prior to removing nests to ensure that you are doing so in accordance with local legislation**

2.5 Careful, well-thought out positioning of the control unit and speakers (some units are combined with built-in speakers) is also vitally important

2.6 Speakers: If being used indoors these must be located at the highest point inside the building, this is to prevent birds climbing above the perceived threat and sitting above the speakers where they may feel safe. The same applies outside, if there are high points on a structure, such as chimneys, silos, roof ridges etc, these should be used as the mounting locations to ensure that the birds flee the area altogether and do not just move to higher ground.

2.7 Speakers: Multiple speakers should be used indoors where the internal area is more than 400m^2 or where there are compartments or dividing walls or where there is a high level of ambient noise (i.e. machinery in factories, milking parlours etc) The sound must be spread evenly around the problem area so as not to push the problem birds into one area of the building where there are no speakers. Birds will naturally move away from the speakers when the calls start playing.

2.8 Speakers: Ideally there should be more than one sound source to confuse the birds and disorientate them, for example in a large industrial unit of 20m X 15m there should be at least two speakers, one at each end of the 20m axis, at the highest point, facing inwards towards each other.

2.9 Speakers: Outdoor speakers should be positioned such that the sound is spread evenly around the problem area with multiple sources to add confusion and distress. Prevailing winds need to be accounted for and the speakers position downwind such that the prevailing wind direction will carry the sound on to the problem area and not away from it. (i.e. if a football pitch is to be protected and the wind prevails from the South West, more speakers should be positioned in the South West Corner of the field than in the opposing North East Corner to take account of the prevailing wind)

2.10 Speakers: Whilst all of our outdoor systems have speakers that are fully weather-proof they should **NEVER** be positioned facing upwards where water will not be able to feely drain away from the speaker's internal components. Directing a forceful jet of water at the speakers, such as a hose pipe is also ill-advised. **ALWAYS** position the speaker either horizontally or at a downwards facing angle to ensure water can drain easily from the speaker face. We offer an advanced range of speakers under our Scarecrow Bio-Acosutic range designed to cope with harsh marine environments and Hazardous Atmospheres. Please call for details.

2.11 Speakers: All speakers supplied, regardless of the manufacturer, come with basic mounting brackets or tabs, if these in-built brackets are not suitable for your application then we have a comprehensive range of additional speaker brackets that allow you to wall-mount, ridge-tile-mount pole-mount or surface-mount your speaker system, at additional cost. Please call us for details.

2.12 Control Units: All of our outdoor systems come with fully weatherproof control units that can be mounted outdoors. Positioning of your control unit will be mainly dictated by where your speakers need to be located and ease of reach for operating the system. Runs of over 30-meters should be avoided to prevent voltage drop and distortion of the sound output. Long Line transformers are available as part of our Scarecrow Bio-Acoustics range to overcome this issue and give almost infinite speaker cable runs. Please call for details.

2.13 Control Units: All of our bio-acoustic systems are designed to be set and forget systems requiring little or no ongoing maintenance, as they are fully weather-proof, corrosion-resistant, solid-state systems. However it is advisable, where possible, that the control units be put within easy reach of maintenance personnel for isolation when needed.

2.14 Control Units: All of our outdoor bio-acoustic systems have in-built daylight sensing diodes that enable the unit to sense when dawn and dusk arise. This gives the user the opportunity to set the system to run either by day only, by night only or 24 hours. It is important therefore that the control unit is located away from sources of artificial light if the daylight sensor is to be relied upon. Street lights, security lights etc can give false readings. Remote ambient daylight sensors that can be placed up to 10-metres away from the control unit are available on our Scarecrow Bio-acoustics range> These allow the control unit to either be placed indoors or in areas of artificial light whilst still allowing for daylight sensing. On Scarecrow units the daylight sensor is fully adjustable and factory preset. On Bird-X units the daylight sensor is factory set and can not be adjusted by the user.

2.15 Control Units: Species selection is normally achieved by programming the unit using a series of dip-switches on the control box. This is very simple to do and only needs setting once on installation.

Multiple distress calls can be used. For example, on crops where Crows and Starlings are causing damage both calls can be played in sequence. Another example would be for use against Feral Pigeons which are notoriously hard to shift, by adding a Corvid call such as a Crow or Rook, this would add additional realism and fear to the pigeons reaction. Corvids naturally prey upon Feral Pigeon squabs (young). Depending upon the manufacturer the units come with between 6 & 9 calls pre-programmed into them. The calls each last between 60 to 90 seconds. On Bird-X units the selected calls play back to back without a pause, on the scarecrow units the selected calls play in sequence with a 60-second delay between each call. Additional calls can be included in lieu of an existing call on Scarecrow units for a small fee. Bird-x units have up to three different versions with varying species calls to give the buyer a good range of options. Please call for details.

2.16 Control Units: Playback of the calls can be set to either run at completely random time intervals (recommended) or at *low, moderate* or *severe* levels with a reducing time interval between calls respectively. Generally low pressure bird infestations can be treated with a 20-45 minute interval, reducing to 5 minute intervals for severe infestations. Some of our more sophisticated units in the Scarecrow Bio-Acoustics range can jumble the call sequences around as well as the time elapsed between call cycles.

2.17 Control Units: Volume is controlled via either a control knob or set screw depending on the manufacturer and model selected. When commissioning the system the installer should remember that pest birds react best of all to hearing natural bird sounds played at ambient sound levels over an evenly distributed, well thought-out speaker layout. If the volume is to low or too high the birds will not associate with the distress call. When the system is being commissioned it should be done when the pest birds to be cleared are present on site. Gradually increase the volume from zero until you start to see the pest birds being alerted to the calls and moving away, this is your optimum volume for the site.

2.18 Power Supplies: All of our systems regardless of manufacturer are powered by 12-volt DC of approximately 0.5 – 1 amp. This is supplied either from a mains adaptor which can either be supplied in three pin UK & Ireland spec or two pin Continental Europe spec. It looks just like a mobile phone charger and should be treated the same way. NEVER mount the power supply out doors in the weather it is NOT waterproof and electrocution could occur. If the power supply has to be mounted externally then have an electrician mount a mains power outlet in an IP-rated weatherproof electrical enclosure with a deep lid so that the power supply can be mounted inside the box. We can supply these enclosures at additional cost, please call for details.

2.19 Power Supplies: Alternatively a selection of our systems can be battery powered for remote operating away from mains power such as fields, roofs, barns etc. A locally sourced deep-cycle marine or leisure battery is required in most cases, from which a special adaptor can run 12-volt DC power to the control unit using heavy-duty crocodile clips. Deep cycle batteries are preferable to automotive

batteries as the latter units are designed to be constantly re-charged by an engine's alternator and do not take well to being heavily drained before re-charging, whereas the deep-cycle batteries are designed for exactly this purpose. If you are powering a system from a 12-volt DC battery it will need to be re-charged regularly by disconnecting it from the distress call system and plugging it in to a battery-charger as necessary. The battery should be placed in a weatherproof battery box if it is being used outdoors, we can supply these boxes at additional cost, please call for details.

2.20 Power Supplies: Trickle Charging. Solar Panels and / or Wind Generators can be used to trickle charge the deep cycle battery, avoiding the need for re-charging the battery off-line. We sell a range of solar panels to suit the power consumption of each type of system that we stock. Please call for details. NOTE solar panels or wind generators cannot be used to directly power the bio-acoustic system. A battery will be required; the solar panel or wind generator is designed to constantly top up the battery and not to directly power the system.

2.21 Your bird scaring system has been designed to give a long, trouble free service life, however it is only as effective as the time and effort spent in specifying and installed the system. Please keep all inspection panels, access doors and grommets closed and water tight. In severe weather conditions such as in marine or agricultural use, smear some Vaseline around the door / panel seals to give added protection.

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3 TOP TEN POINTS TO CONSIDER.

3.1 ALWAYS confirm which bird species you are dealing with prior to taking any action.

3.2 ALWAYS consider what physical bird proofing can be installed prior to opting for a bio-acoustic system.

3.3 ALWAYS remove artificial food sources prior to installing the system.

3.4 ALWAYS clear the infested site of any nests*, disinfecting the nest site with PX Ornikill or Bird Sheild™ to remove the birds' natural scent. (*check conformance with local legislation on nest removal prior to doing so)

3.5 ALWAYS mount the speakers at the highest point available.

3.6 ALWAYS place the control unit away from artificial light or use a remote light sensor if night-time shutdown is required.

3.7 ALWAYS use multiple speakers on areas over 400 m^2 or multi-zone areas or high ambient noise areas

3.8 NEVER set the volume too loud, aim for natural bird sounds at ambient bird volume and never use other bird's distress calls against a different species unless directed to do so by ourselves.

3.9 NEVER mount a speaker facing upwards indoors or outdoors as it will fill with dust and / or water and cause damage.

3.10 NEVER position a power adaptor or battery outdoors, or in a position where it could get wet, without placing it in a waterproof enclosure. Keep all access doors, grommets and inspection covers firmly closed at all times.

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4 BASIC INSTALLATION STEPS COMMON TO ALL BIO-ACOUSTIC SYSTEMS

4.1 Position your control box (if separate from your speakers) in a suitable location where it can reach the speakers within the limits of the speaker cable supplied and is in an area where natural daylight will be picked up by the built-in light sensor if daylight sensing is required. The unit should not be positioned near any artificial light sources.

4.2 Position each of the speakers at the highest point in the infested area. At the very least the speaker should be at the same height as the birds when they are at rest, preferably higher (minimum 2-meters above them). For indoor infestations it would be wise to locate one or two speakers outside of the building on the highest point to ensure that the birds that are expelled from the interior do not simply land on the building's roof, only to return indoors later.

4.3 Run the speaker wires back to the control unit, protecting them in shielded conduit if necessary. (follow current IEEE standards). Connect the speaker wires to the speaker outputs in the control unit as per the manufacturer's instructions.

4.4 If not already available within 5-meters of the control unit, run a mains, single phase domestic 13-amp power supply to within 5-meters of the control unit (use a professional electrician). Most are powered from a plug-in power adaptor that adapts the power output to the control unit from mains AC to 12-Volt DC. **N.B.** The power supply must not be exposed to water and must be placed in a suitable weatherproof enclosure if being sited externally.

4.5 Alternatively to guidance in 4.4, some units can be powered using 12-volt DC deep cycle batteries that are trickle charged using solar panels. In this case mount the battery within 2-meters of the control unit and connect the solar panel positive and negative connectors to the corresponding battery terminals.

4.6 Connect the power supply or battery to the control unit using the terminals supplied as per the manufacturer's instructions. Once all connections have been made, check that they are sound prior to powering up the system.

4.7 Select the required species' distress calls, as per the manufacturer's instructions.

4.8 Select whether the calls are to run by day, by night or run 24-hours, as per manufacturer's instructions

4.9 Set the time-off interval between distress calls as per the manufacturer's instructions. We recommend that you start on the longest delay setting and decrease the delay period only in severe infestations or where a permanent food source that cannot be controlled is present.

4.10 Some manufacturer's offer a random setting option that will automatically shuffle the sequence in which the selected distress calls are played to add more deterrent effect. We recommend that you select this option if more than one distress call is to be used.

4.11 Some manufacturers offer an adjustable daylight sensor which is factory set. However, in areas where artificial light pollution is unavoidable this can be offset by adjusting the daylights sensor. Do so in accordance with the manufacturer's instructions. Alternatively, if a remote daylight sensor is to be used, install it in appropriate position and connect it to the control unit now, in accordance with the manufacturer's instructions.

4.12 Turn-on the power with the volume at its lowest setting. The final stage of commissioning should be undertaken with pest birds on location so that the volume adjustment can be set to its most effective level. With birds on site, gradually turn the volume up from zero until the distress call is picked-up by the pest birds and they start to react to it. **DO NOT** set the volume any higher than this setting as the target birds will quickly grow accustomed to unnatural noises. You are aiming for natural bird sounds played back at ambient bird volume. It should sound just the same as the pest birds themselves.

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