

**BIRD CONTROL –WHAT NEW TECHNOLOGIES AIRPORTS SHOULD BE CONSIDERING IN
TERMS OF BIRDSTRIKE AVOIDANCE.**

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INTRODUCTION

When a pilot is told by Air Traffic Control that they are “clear to take off, or land” the Controller is making a statement that, to the best of their knowledge, through runway inspections, the use of Surface Movement Radar, if available, bird runs, FOD inspection etc. the runway is clear of objects which could interfere with the safe take-off and landing of his aircraft.

We know that debris on a runway can cause catastrophic damage to an aircraft as sadly seen with Concorde and that similar crashes have resulted from birdstrikes, especially if a flock of birds is encountered.

Birds on an airfield should be considered as FOD and the same effort should be applied to their detection and removal. In most cases, reliance is placed on eyesight and vigilance of ground staff to adopt Best Practice.

Can this working practice be improved, assisted by the latest technologies?

ADVANCED TECHNOLOGIES HELP

Airports are necessarily large, flat and open areas and detection distances of well over a kilometre are not unusual. If reliance is placed on fixed point observations, such as from the Control Tower, can we be sure of detecting even a flock of something the size of house brick or smaller, in all weather conditions at such a distance? All too often we have shown that we cannot, but technology exists to improve this.

SAFETY MANAGEMENT

Aviation Safety must consider the ongoing evolution of interactive science, technologies and methodology.

An Integrated Bird Management System is just part of that evolution: a stated Safety Management Policy that, when implemented, is designed to reduce the attractions for birds on an airport and then to disperse those birds that persist by bio-acoustic and other means.

An Integrated Bird Management System is a ‘best practice’ policy which will achieve maximum effect in keeping airports as free as possible from the danger of a birdstrike from hazardous species.

Others in the business of contributing to the implementation of an overall airport safety policy will have specialist expertise in their own domain and will include, amongst others, land and grass management, lighting and signage, foreign object debris detection, surface friction testing.

Integrated Management Systems have been proven to be effective in reducing the risk of damage from birdstrikes and the same principles can be applied to FOD detection and prevention. In both, control of the problem involves two basic functions; detection of the object or bird(s) and their removal.

Although the latter is labour intensive, the detection can be enhanced by the constant operation of the latest generation of surface scanning radars that can equally detect a 50mm bolt or a 500g crow on a runway at up to around 1km distance; once found, both can be removed by a mobile airside safety crew.

COMPUTERISED EVENT RECORDS

Technological improvements to bird dispersal systems have now made these compatible with automatic data collection systems. We are now in a position to integrate existing safety systems with virtually automatic detection, triggering computers in Control Tower and "on-board" in airside Operations vehicles, giving the driver the precise location of birds and FOD on a runway to within a few metres. Their detection is recorded and the removal is logged automatically; when bird distress calls are broadcast these are also noted.

In actioning a due diligence, due care, airport safety management policy for birdstrike avoidance actions, it is now an expectation that these are automatically recorded by a Data Management System, perhaps also noting other 'good housekeeping' actions by the Safety Team to other potential airside hazards.

Data collection can be by vehicle installed computers, used in the day to day airport risk management process, and/or downloaded by email or Bluetooth processes to a central airport computer from which airside operational efficiency can be established, the effectiveness of the chosen policy confirmed and monitored.

Computer stored data can be used for efficiency monitoring and as real evidence at accident investigations, an improvement over the practice of hand written notes as these are not reliant on operator memory and cannot be 'adjusted' after accidents. Data can also be used for comparative cross reference at daily, weekly, monthly or yearly intervals and within Groups of airports.

However, new technology alone will not deal with these problems; trained staff working for an enlightened management will always be necessary to ensure the same technology is correctly implemented.

The potential exists for systems that are automatic or are totally computer controlled to actually increase imminent dangers, the reason why we promote dispersal systems where the facility for human control is incorporated.

REVIEW HUMAN ATTITUDE

As with all things new, ours and others' attitudes may have to be the first things to change! As an example, tried and we thought abandoned years ago, the idea of putting loudspeakers playing 'bird' and other noises down runways at fixed positions is being discussed again.

We cannot state that this principle is not at all effective but we can state that vehicle based mobile systems are in majority use with proven efficiency.

SYSTEM COST AND EFFICIENCY

Fixed systems are not regarded as an efficient, or indeed a safe, method by which to broadcast bird distress calls; by their very nature they are also expensive in hardware and installation.

Depending on the location of the "bird control point", it may not be possible for the Operator to identify the bird or indeed hear that the right bird distress call is actually being broadcast so questions must be raised:

"If they cannot, how do they know the birds can hear it?"

"If the birds do not disperse in response to a fixed position broadcast, or non-broadcast, what does the Operator then do?"

"Despatch a vehicle to do the job and if so, will aircraft be held while this is done?"

"Is this more efficient than having the vehicle out on the airfield doing the job in the first place?"

New generation Ground Radar systems will also identify the location of birds and other forms of FOD and prompt area attendance by the airside mobile Safety Team.

When the bird control Operator takes a mobile bio-acoustic bird dispersal system to the problem flock of birds, they are able to hear the broadcast clearly, set the sound level according to the task in hand and turn it off when they have completed the task of dispersal.

