

Wildlife & FOD Workshop

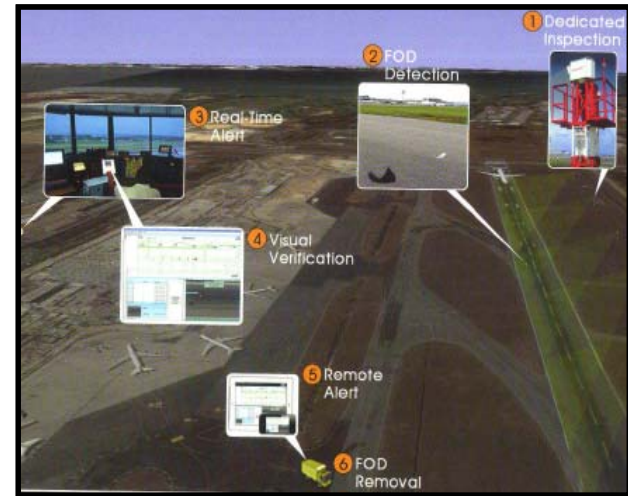
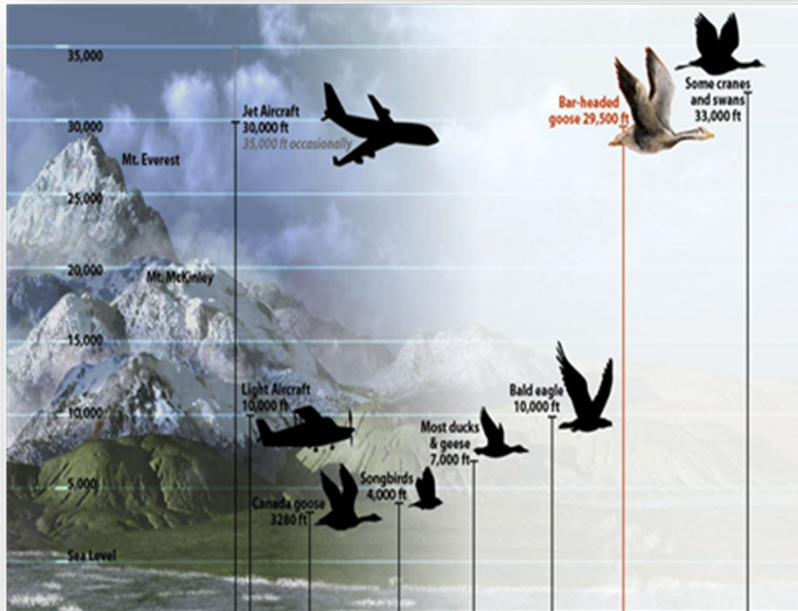
Technology

Session #6 Presentation #1





FOD & Wildlife Technologies



Available systems

Costs

Benefits





FOD & Wildlife Technologies - based on evidence

Statement

- At one time the greatest scientific minds of the world were convinced that.....?

'The world was flat!'



What are we planning for: Strategic vision

→ Where will

State/CAA/Airline/Aerodrome be in:

→ 2 years

→ 5 years

→ 10 years

→ 20 years

Informed vision:

What factors shape the vision:

→ Global factors

→ Regional

→ National


→ social

→ Environmental * Airport Carbon and Emissions Reporting Tool (ACERT)



FOD Technologies based on evidence

Doc 9137
AN/898
Part 3



Airport Services Manual

Part 3
Wildlife Control and Reduction

Approved by the Secretary General
and published under his authority

Fourth Edition — 2012



WILDLIFE HAZARD MANAGEMENT HANDBOOK

Second Edition 2013



STEADES

Safety Trend Evaluation, Analysis and Data Exchange System

Runway Incursions



Doc 9332-AN/509

MANUAL ON THE ICAO BIRD STRIKE INFORMATION SYSTEM (IBIS)

ACRP REPORT 32

Guidebook for Addressing Aircraft/Wildlife Hazards at General Aviation Airports

AIRPORT COOPERATIVE RESEARCH PROGRAM

Sponsored by the Federal Aviation Administration



Advisory Circular

Subject: Airport Foreign Object Debris (FOD) Management **Date:** 9/30/2010 **AC No:** 150/5210-24
Initiated by: AAS-100 **Change:**

- PURPOSE.** This advisory circular (AC) provides guidance for developing and managing an airport foreign object debris (FOD) program. In addition, this AC provides specifications for the equipment used in FOD removal operations.
- SCOPE.** The program described herein is composed of four main areas: prevention; detection; removal; and evaluation. Each of the four areas (corresponding to a dedicated chapter in this AC) contains strategies and practices that can help reduce FOD at airports.



FOD & Wildlife Four Key Steps

Outcome



- Evaluation
 - Removal
 - Detection
 - Prevention

→ **Currency of Programme is critical**



FOD Wildlife Technologies – What are you responsible for?

Amendment 10 to Annex 14, Volume I



- 9.4 **Wildlife** strike hazard reduction
- *Note.—The presence of wildlife (birds and animals) on and in the aerodrome vicinity poses a serious threat to aircraft operational safety.*

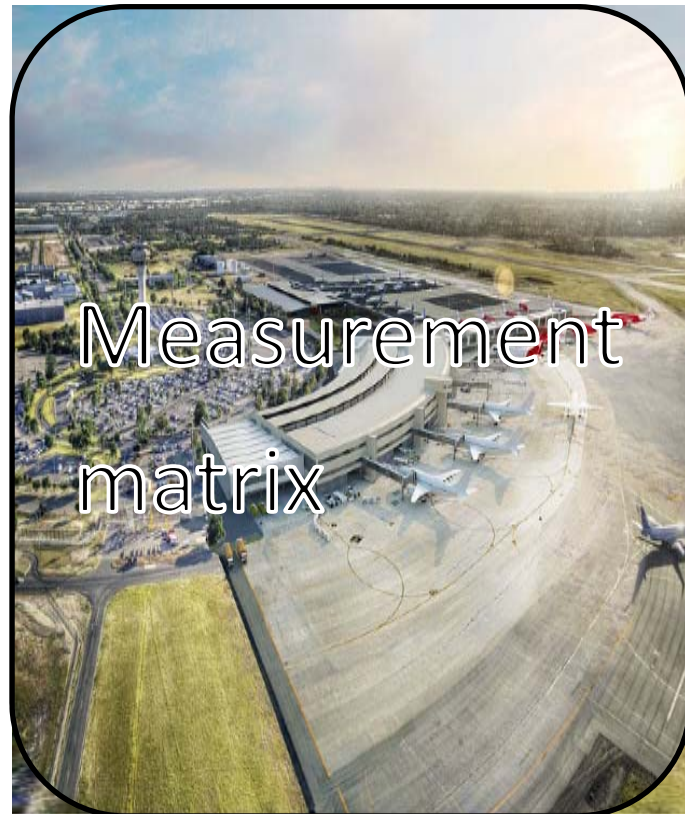
- 59% below 100 feet (30 m)
- 92% below 3,000 feet (900 m)
- Less than 2% above 10,000 feet (3000 m)
- Highest strike: 32,500 feet (10000 m)

→ 13 Kilometres from airport, particular attention to approach & Departures Route





If it's not documented, it's not happening



- **Continuous Monitoring**
- If it's not documented, it's not happening
- Yearly review by responsible accountable person
- Approved by knowledgeable person



Aerodrome FOD Prevention

- Standard CCTV
- Low light cameras
- Radar with cameras mounted on pylons alongside runways
- Mobile radars mounted on vehicles
- Driven on the runways, taxiways, aprons and parking ramps
- Detectors mounted on the runway edge lights
- Radio frequency identification for tools



[QinetiQ](#)



[Trex Aviation Systems](#)



[Xsight Systems](#)



Many providers



**It must suit
your Airports
immediate
problems &
long term
goals**

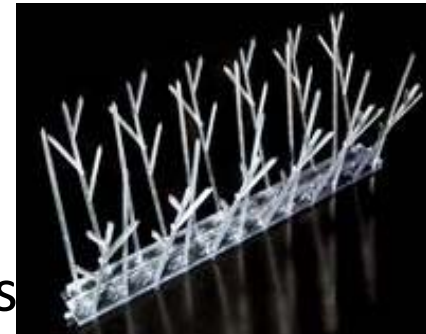


New Technologies/Equipment

Often Simple Technology is best:

▪ **Good Housekeeping**

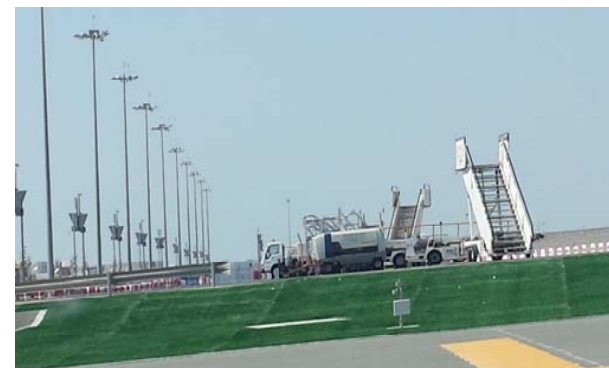
- Related to baggage & Cargo
- Covered ULD's & baggage carts with sides
- Water bottles, coffee cups



In respect of Wildlife:

Good habitat management

- Strings
- Kites
- Hand held lasers
- Synthetic grass





New Technologies/Equipment

Pavement Cleaning

- FOD Amenity
- Scheduled Deep Clean
- Ramp Sweeping for removing sand, rocks, metal parts, chipped concrete, asphalt
- Your FOD removal costs drop dramatically, attach to your vehicle and turn it into a powerful sweeping machine.
- Service lifespan over a decade





FOD Technologies based on evidence

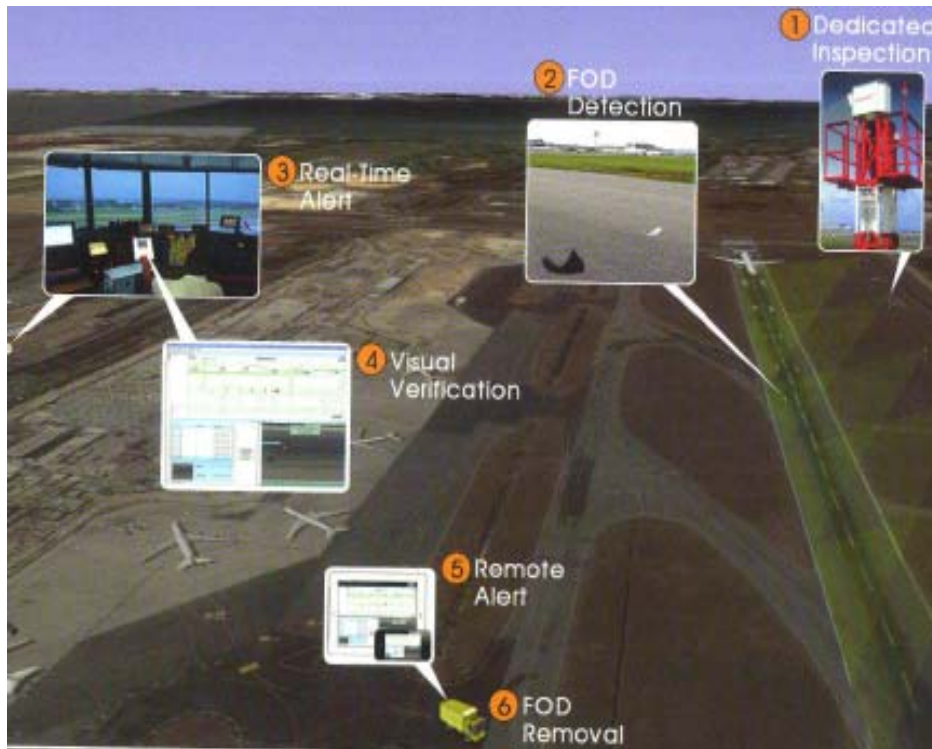


One vehicle-
Many Applications



FOD Technologies

→ Consider what airfield works are planned and apply new technologies at the same



Product Specifications

Sensor	High resolution Electro-Optics (EO) Sensors
Number of Sensors	10 sensors per 3400m (11,155ft) runway
Position Accuracy	< 1m (3.2ft)
FOD Detection Size	Down to 2cm (0.8 inch)
Detection Rate	92% and above
Detection Time	Less than 1 minute for Day Detection and 2 minutes for Night Detection
Alert Types	Audio and visual remote alert via mobile devices
Event Log	Date/Time stamp, location, classification and image
Video Playback	Continuous and event recording
Operating Temperature	-40°C - +60°C (-40°F - +140°F), with optional environmental control
EMC/EMI	Zero interference with airport systems
Built-in Redundancy	Backup coverage by adjacent electro-optic sensors
Detection Coverage	Runways, taxiways, aprons, aircraft hangars and flight deck of aircraft carriers





In Conclusion





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Any Questions

