

WILDLIFE HAZARDS



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ICAO-ACI Airports Conference

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GREETINGS



“...and let no new thing arise”

WILDLIFE PROBLEM?



- “Wildlife strikes cost aviation in America \$380 million a year” - Jane Garvey, FAA Administrator
- “Birdstrikes are one of our top three issues”
- James Hall, Chairman, NTSB
- “There has never been a greater potential for catastrophe than in the current conflict between wildlife & aviation”- Mike Dunn, Ass’t Secretary of Agriculture

PROBLEM?



- 90+ DEAD SINCE 1995
- ONE Billion \$/year-worldwide
- \$300-400 MILLION/YR IN USA
- \$24 MILLION @ DTW IN 4 MONTHS

Industry Incidents



- Daytona Beach - USAirways B737: single engine LOC-BC to single engine GA
- Edmonton - Westjet B737 single engine ILS to single engine GA, fly to Calgary
- MCI - US Jet DC-9: no engine approach
- MKE - Skyway B-1900: wing penetrated, engine out, max lateral imbalance

International incidents



- Istanbul - A-340: 2 of 4 engines out, gulls, safe return
- Tel Aviv - TWA B767 uncontained engine failure, blew 4 tires, safe return
- Seoul - 5 747s in 10 days
- ETOPS - 13 B767 turnbacks

Elmendorf AFB, Anchorage, AK

- USAF E-3 encountered Canada geese
- Vmcair, rising terrain
- 24 dead



Last fatal accident due to wildlife

- April 20, 2000
- central Africa
- 21 dead

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Locally



- MIA - January - Avianca B757 - vulture ingestion on departure
- JAX - March - CAL 737 gull ingestion on takeoff



American B767 14000'/280kts



Meet Alex Orosz



- FOD MANAGER - UNITED AIR LINES
- SOFTWARE DEVELOPER
- Ph:650-634-2340

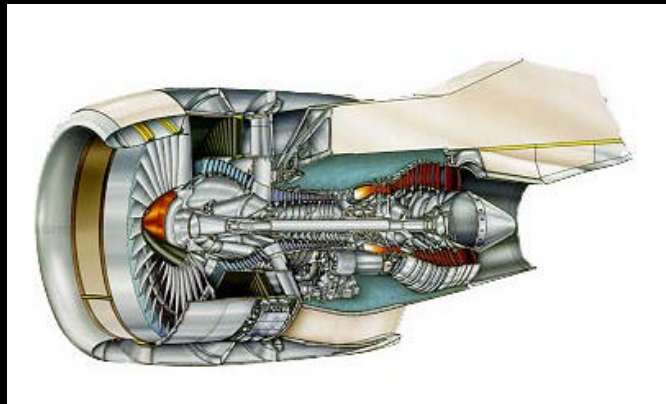
UNITED AIR LINES DAMAGE



- In 1999 UAL had 1,326 birdstrikes
- 40% of engine FOD at UAL
- no other carriers are interested

Current Standards - all engines

- Must not catch fire
- Must not explode (uncontained failure)
- Must not exceed design limits
- Must be able to be shut down



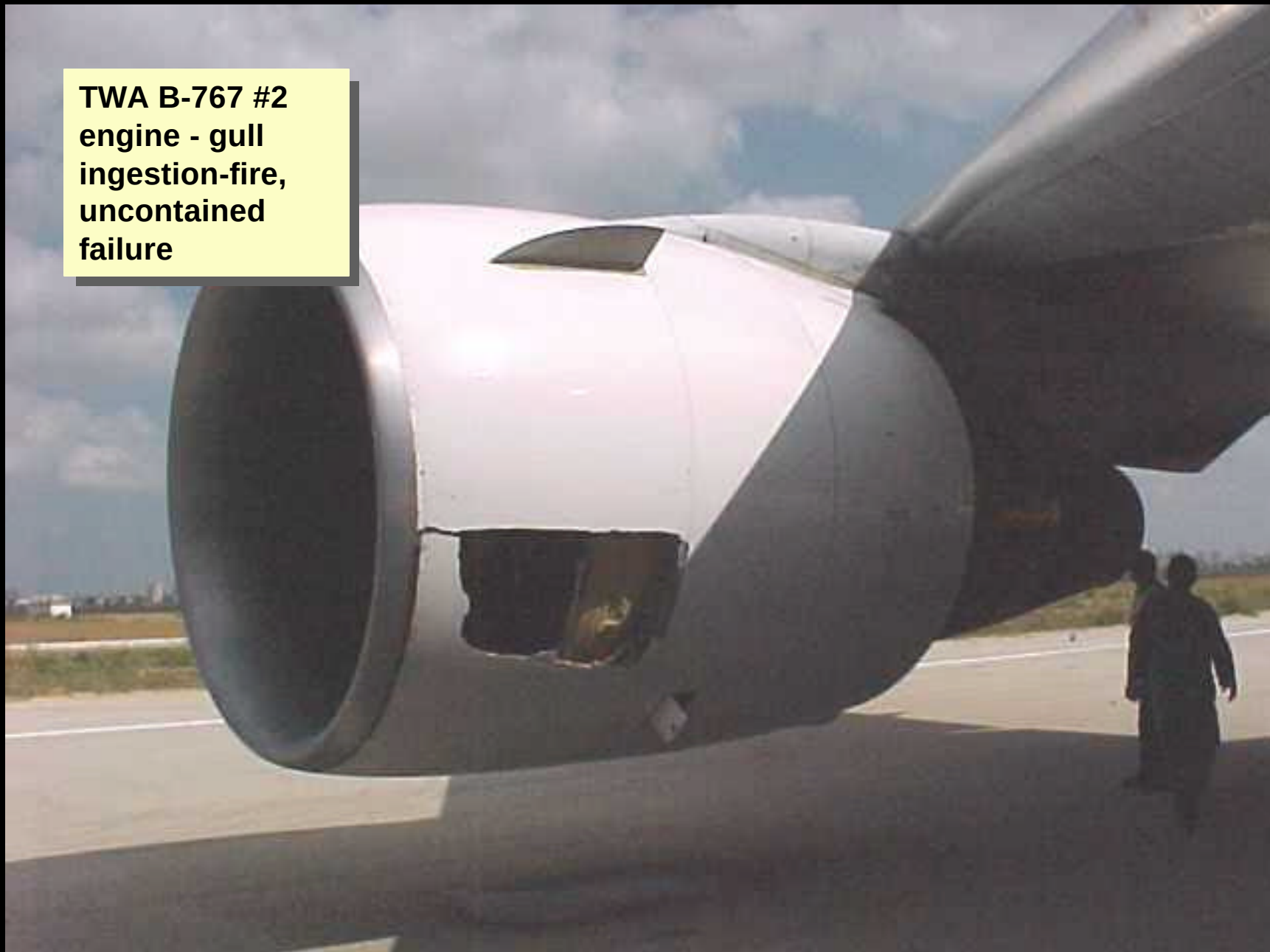
**Evergreen B-747
#4 engine-
vulture strike-
uncontained
failure**



Photo by Barry Byrne

<http://www.Airliners.net>

**TWA B-767 #2
engine - gull
ingestion-fire,
uncontained
failure**





Recent incidents



- DFW - MD-80 - 430 dead starlings
- Daytona Beach - B737 - 200 dead gulls
- Cincinnati - B757 - 400 dead starlings
- Portland - MD80 - 200 dead starlings



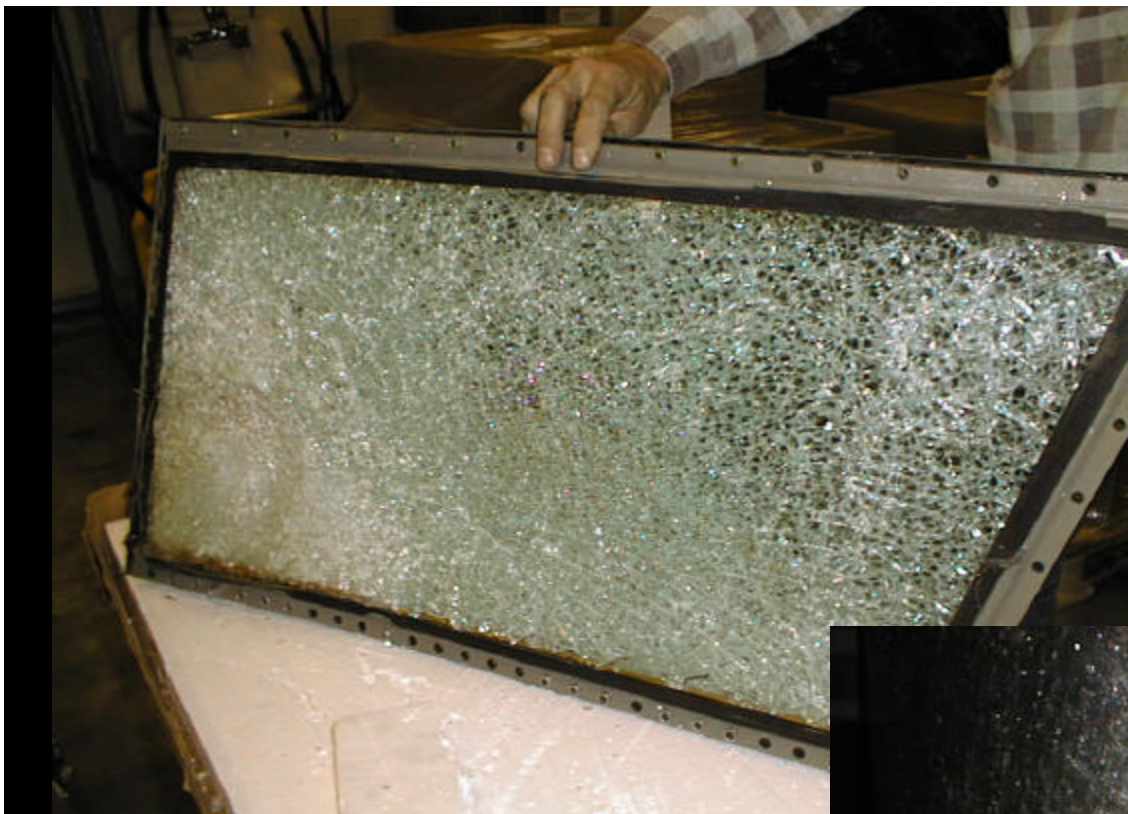
Budgey-CSL-studies

- Three dimensional flock structure - 100" engine:
- Canada geese - 3
- Mixed gulls - 4
- Starlings - 9

WINDSHIELD/AIRFRAME



- Design limit-windshield- #4 bird at V_c
- 1997 events
- Design limit-airframe- #8 bird at V_c
- Viscount vs. swan



**B-737 captain's window vs. goose
@ 10,000'/310 knots**

**Window spalled-glass
shards-aircraft
depressurized**



**Canada 3000 A-320 vs.
vulture**

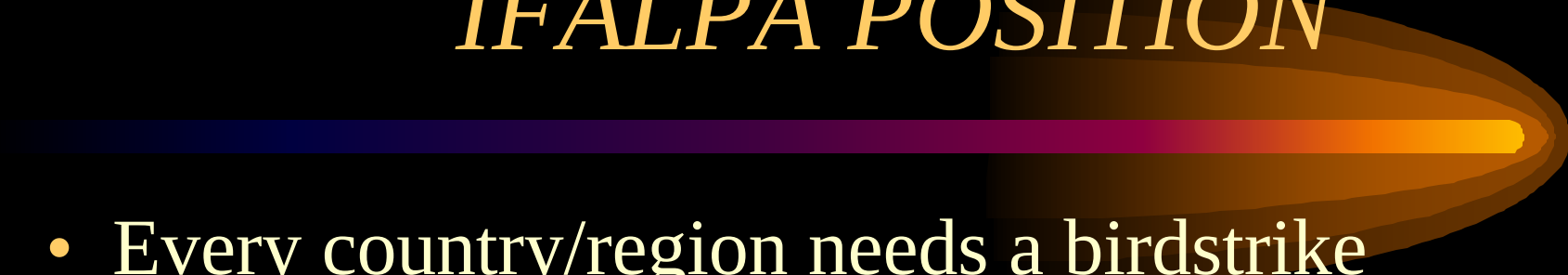




**Air Ontario DH-8 vs. Canada geese-
both props shattered**



IFALPA POSITION



- Every country/region needs a birdstrike committee-gather data, recommend mitigation
- Change ICAO Annex 14 to make wildlife mitigation a ***STANDARD*** NOT a “recommended practice”

Airport Operators



- On the tip of the spear
- Required by FAR Part 139 to mitigate
- ICAO ‘recommended practice’
- Where does the money come from?
- What is the rest of the industry doing to help?

Airport Operator Liability

- Safeco Ins. vs. the City of Watertown - \$2.5 million
- Air France vs. Port of New York (JFK) - \$5 million
- Washington Dulles & United Air Lines - \$6 million
- Casino Express vs. Western Nebraska

Are you alone?



- How many bird feeders has MSP removed from NWA jetways?
- Why do gulls perch on NWA catering trucks in SEA?
- How many jetways in MKE have bird nests?
- Why are there gull droppings all over jetways, terminals & uncovered dumpsters in SAN?
- Why do Canada geese WALK across runways in DTW?

ACI

- What is ACI's position?
- What about AIP funds?

ATA/IATA



- What actions are being taken in mitigation?
- Why does the ATA Safety Council view this hazard “...with a collective yawn”?
- Costs: one fan blade for A-320 engine: \$11,000; one A-320 engine: \$2.9 million

ICAO



- Upgrade the Annex - change “recommended practice” to Standard for worldwide airport operators
- No dump sites within 3 kilometers or 10,000’ of runways
- Industry education/awareness - who’s problem?

Government regulators



- FAA Flight Standards - no training, no program
- Transport Canada - Director of Air Navigation Services

PILOTS



- What doesn't work: noise, lights, radar
- What does work: patience, planning, avoidance:
- Don't takeoff!!
- Climb via ICAO noise profile
- Slow down
- No training-no education-none required

Air Traffic controllers

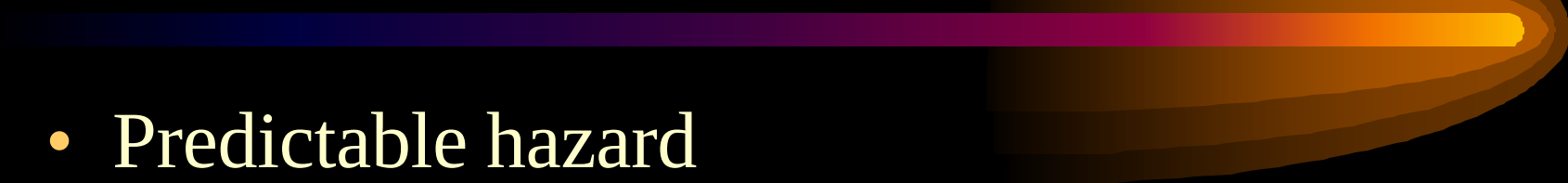


- Don't comply with FAA Order 7110.65, paragraph 2-1-22
- “cleared for takeoff-cleared to land”
- no training-no education-none required

Airline Station Agents

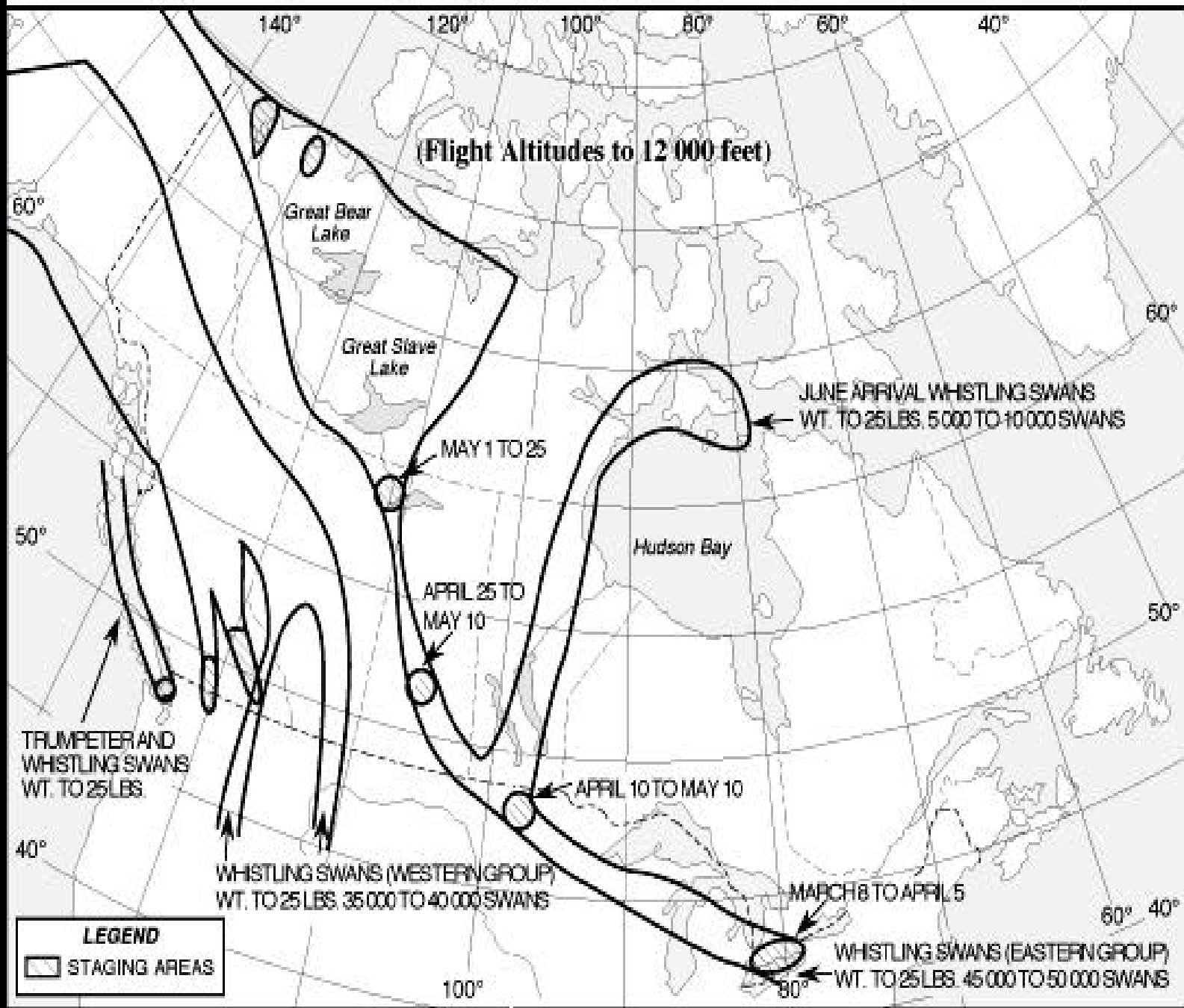
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- Why not report FOD?
 - Why not participate w/airport ops?- reduce delays/damage, improve on-time, improve customer satisfaction

Dispatchers - SOC



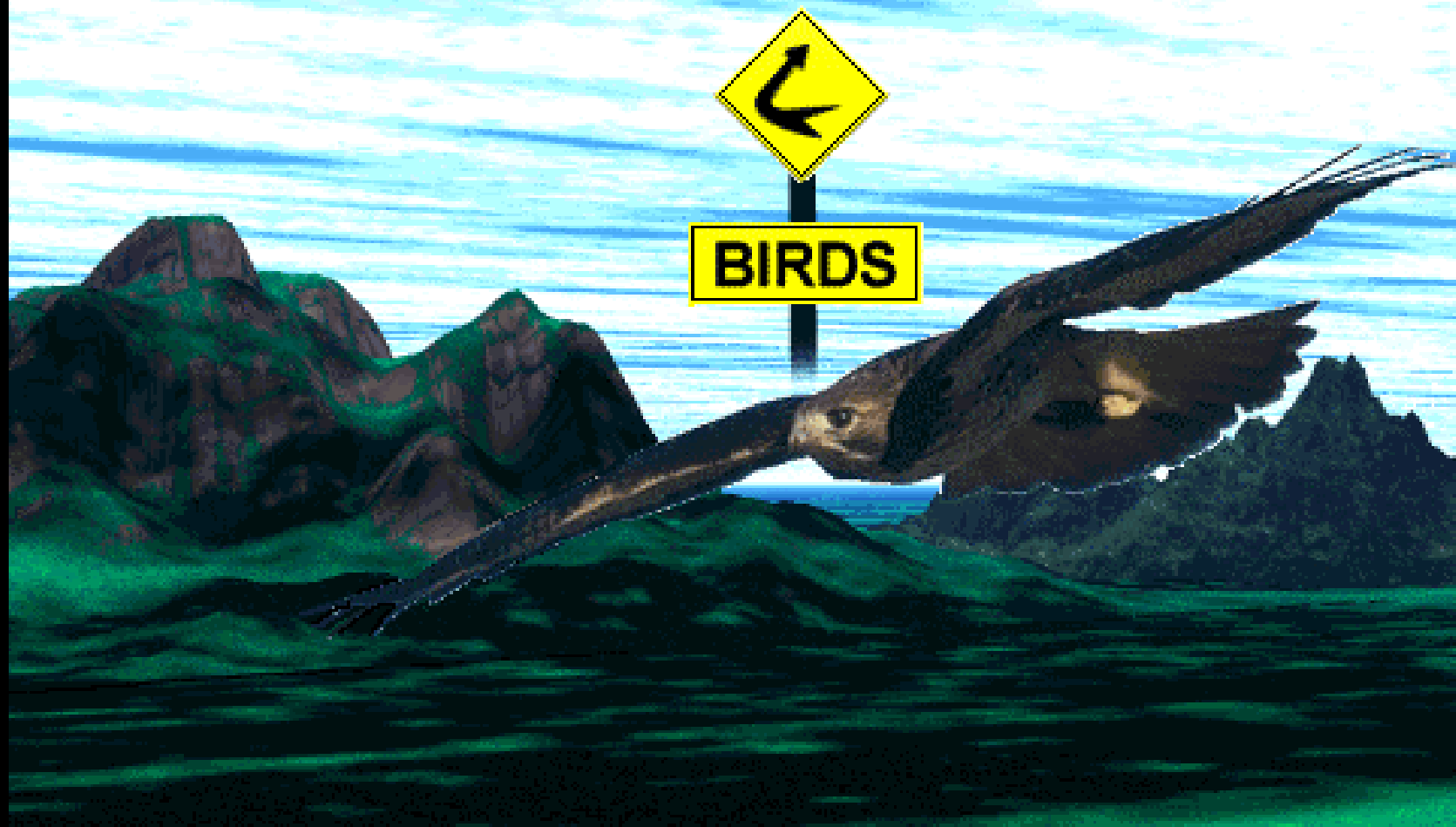
- Predictable hazard
- Technology in place
- No warnings issued

Spring Migration Routes - Swans





AHAS





Above: National network of 137 Nexrad Radars in the U.S.A. The compressed reflection of heavy migration follows a front on 4.10.95 at 04:26 (Photo: S.A. Gauthreaux JR).

Below: 4 sequences of a roost of purple martins. (a) 7.5.95 at 04:03 -- the two crosses mark the location of the roosts (left: about 50,000 birds, right: about 150,000 birds). The birds are not seen while roosting on the trees. (b) 7.5.95 at 05:13 -- birds start to move. (c) 7.5.95 at 05:22 (d) 7.5.95 at 05:51.

Management/owners

- Provide education to ALL employees
- Mitigate this hazard like wind shear, icing, volcanic ash





The National Transportation Safety Board

- 9 recommendations regarding wildlife hazards to FAA in November, 1999

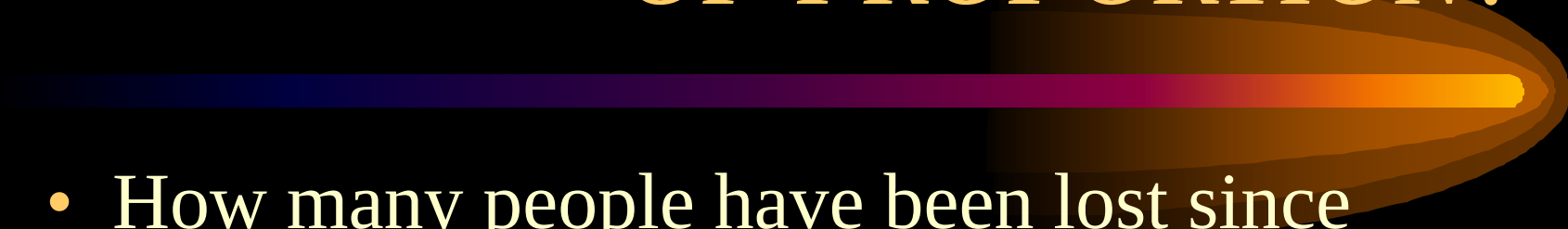
Accident Investigators?



— PHILADELPHIA:

- 10/98 - USAirways - engine failure
- 4/99 - USAirways - engine damage
- 10/99 - American - engine failure
- 12/99 - American - engine failure
- 2/00 - USAirways - engine failure

INDUSTRY OUT OF PROPORTION?



- How many people have been lost since 1995 to:
- Air Rage?
- Volcanic ash?
- Inflight turbulence?
- *LAHSO*?

Airport Mitigation Plan



- Low labor costs - hi tech costs
- Hi labor costs - low tech costs

ABSOLUTELY PROMISE



- Reliable - 3 reasons
- Dependable - twice a year
- Repeatable - if no changes are made
- PREVENTABLE - if we
“learn from incidents”

Schedule with safety

