

Bird Strike Committee Proceedings
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LET NO NEW THING ARISE: Wildlife
Hazards to Aviation

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Two centuries ago, in the old countries, a common greeting or salutation was: "Let no new thing arise". 'New Things', such that they were, were met with suspicion, often for good reason. Things had changed relatively little in the world from the time of Caesar to the time of Napoleon. Ideas and information could travel no faster than a man could walk or a horse could trot. Today, in the 21st century, we have virtually instant communication and exchange of ideas worldwide. Things have changed.

In aviation things have changed, too. I am old enough to remember flying aircraft with just a little ice on the wings as: "its ok, it'll carry it". I can remember being trained by one of our military services that one should penetrate the bottom one-third of a thunderstorm cell, as that's where the smoothest ride will be. No one had heard of microbursts or flight path trajectory. We, in the aviation industry, modified our behavior after bitter lessons taught us that our procedures were incorrect, dangerous.

Aviation today faces another, new, thing: wildlife hazards. Since 1995 we have, worldwide, over 90 people dead from collisions between their aircraft and wildlife. It is truly a worldwide problem: the General of the Air Force in India worries about elephants on his runways; flamingos cause engine failure on a wide body aircraft in Kenya; Lan Chile has 2 B767s with destroyed engines in one week in Santiago due to bird ingestion; the Israeli Air Force has lost more aircraft to bird strikes than to air-air combat; an Air Ontario twin turboprop has both props shattered at Toronto City after striking geese; a Delta MD-11 scatters engine parts over 5,000' of runway in Portland after ingesting a Gull; a Learjet owned by the Dallas Cowboys Football Club is destroyed by post-impact fire after colliding with deer on the runway in Alabama; in Panama two are killed when their news helicopter collided with a vulture this spring.

We previously heard the statistic from the U.S. FAA that wildlife damage to aviation in the U.S. caused \$300-400 million in damage and lost revenue every year in the U.S. Now we are faced with the shocking statistic, from Central Science Laboratory in the U.K. that, worldwide, wildlife strikes to aircraft are costing the worldwide aviation community *US\$1.6 billion a year, every year*. Quite a shocking statistic considering the crying needs of aviation worldwide.

From an industry viewpoint we find that there is good, bad and ugly regarding this new hazard:

THE GOOD

- The FAA has had a policy change regarding the use of AIP funds for airport wildlife mitigation. AIP moneys can now be used to fund a study of airport wildlife providing that there is a likelihood that the study will recommend a project which can be funded by AIP money, e.g., new fencing, drainage, etc.
- The FAA has published, on CD, the manual *Wildlife Hazard Management on Airports and Civil Strikes to Aircraft 1990-99*. Both publications are available on the same CD, in both English and Spanish.
- Some FAA certification specialists and some airport operations personnel now recognize and react to wildlife hazards as another task in running a modern airport, similar to snow removal, security, fuel farm integrity, etc.
- Transport Canada has published its manual: *Sharing the Skies – An Aviation Industry Guide*, an excellent overview of the problem for all members of industry. There is now no paucity of creditable literature on this new hazard.

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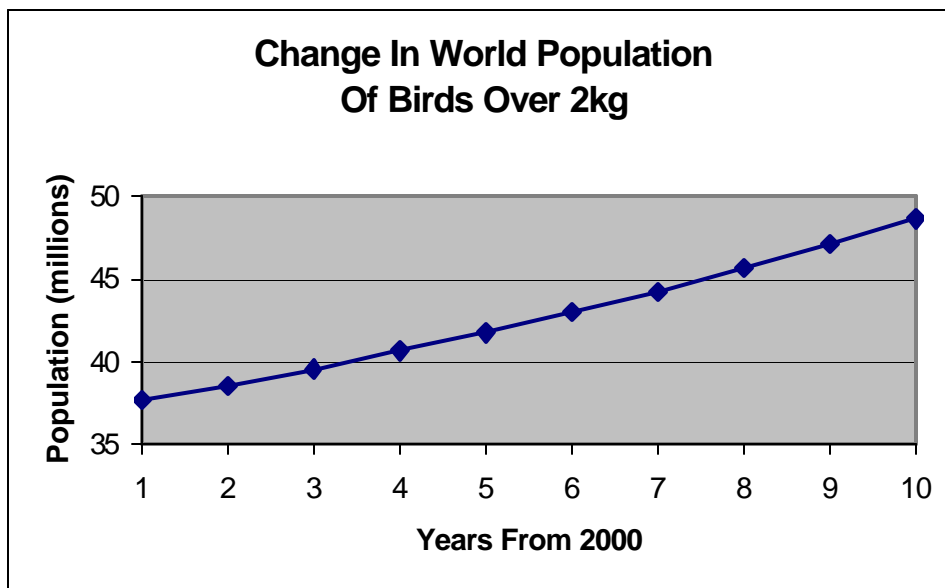
- Transport Canada has entered into the CARAC process to codify its recommendations on wildlife control on airports.
- ICAO has held two conferences, one last year in Africa and one this year in Miami for the Western Hemisphere states, on wildlife hazards to aviation. It is hoped that soon ICAO will move to change the Annex to make wildlife mitigation at airports a standard rather than a recommended practice.
- The ARAC Engine Working Group, composed mainly of JAA, FAA and engine manufacturers have met several times and are close to writing a rule regarding increased robustness for bird ingestion for new engines.
- The ARAC Engine Working Group has authored a paper, from the engine designers/manufacturers viewpoint, regarding the seriousness of the threat to the modern jet engine by wildlife. Phrases such as "...the probability of multiple engine power loss in the future will become intolerable..." and "...conflicting priorities of wildlife conservation measures..." should erase any question by those in the industry who feel wildlife strikes aren't a problem.
- New technologies are emerging, slowly, to meet this new threat. If 70% of birdstrikes occur below 500 feet, making them the airport operators problem, what about the other 30% of the problem? Off the shelf solutions, such as current radars, may be the answer.
- Education: although no airline employees worldwide receive any training regarding this hazard, nor is any training required by any government, astute college professors have observed the data, drawn their own conclusions and begun offering training regarding wildlife hazards to a new generation of future aviation professionals. Colleges that offer such training include Embry Riddle, North Carolina, Rutgers.

THE BAD

- IATA (International Air Transport Association) has no concept of the problem and no programs underway or planned to help mitigate the hazard. IATA's Director –Aviation Environment recognizes noise, emissions, pollution and waster management as airport environment problems, but not wildlife hazards. IATA's members bear most of the \$1.6 billion in losses every year, but have no program to reduce these losses.
- ACI (Airports Council International) has no program for its members to address wildlife hazard mitigation on its member's airports. While its sister organization, AAAE, sponsors wildlife training seminars annually, ACI doesn't recognize wildlife as an environmental issue.
- Air carriers have no involvement in mitigation of wildlife hazard and little recognition of the problem. As Northwest's Vice President-Safety, John Kern, told this group two years ago in Vancouver, the "...carriers don't understand the problem". Little has changed with the carriers in the last two years. Recently, in a cost reduction move due to a downturn in business, Northwest removed one wineglass from first class trays to save \$75,000 annually. Last month I flew an A-320 which had 4 engine blades replaced due to damage from bird ingestion. At \$11,000/blade, just the replacement cost was \$44,000, not counting time out of service. One ingestion event effectively negated one of the cost reduction steps. Northwest, as a carrier, is reflective of most carriers views in that it has no concept of the problem of bird nests in its jetways in Milwaukee, bird feeders hanging from its jetways in Minneapolis, gulls perching on its catering trucks in Seattle.
- Some airports, such as PHL, DTW, PDX, either have little concept of wildlife hazards or are unable to receive adequate support from its governing body to establish effective programs. The level of continuing damage at these problem airports is mute testimony to their lack of effective programs.

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- Litigation continues to be viewed by the carriers as mitigation for wildlife damage to their aircraft. Since *Safeco Insurance vs. City of Watertown* in federal court established the precedent that the airport operator is responsible for wildlife control on his airport, other litigation has been forthcoming. Currently outstanding is the case *Casino Express vs. Western Nebraska Airport*.
- Airport capacity problems continue with no end in sight. Airport expansion plans are opposed by community groups who complain about expanded noise footprints. If only one-half of the annual worldwide loss to aviation could be recovered and plowed back into airport infrastructure, \$800 million a year, how many Stage 4 engines could be purchased, how many homes could be insulated or bought out, how many new runways could be built?
- Reporting of wildlife strikes to aircraft still leaves a huge void. Science cannot attack a problem for which it has no data. ICAO reveals that, worldwide, more than 100 states have wildlife strikes annually, but states reporting strikes varies from year to year from 35-55. In the U.S. most carriers still have no method to routinely capture this data and forward it to the FAA/USDA database.
- The UK's Central Science Laboratory has informed us that bird populations, especially large birds, have increased exponentially in the last 15 years and will continue to increase as there are no natural forces acting to limit growth.



THE UGLY

Keeping in mind that a picture is worth a thousand words, the following are brought to you from events since the last time we met:



Top to bottom: China Air @ Vancouver; Air Ontario props vs. geese @ Toronto City; Canada 3000 Airbus vs. vulture; ProAir B737 windshield vs. goose over New York