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Goose cull resumes at Amsterdam

Amsterdam's Schiphol Airport is expected to start gassing thousands of geese to prevent potentially lethal bird strikes on aircraft, after an animal rights group failed to convince a court to halt the cull.

Airport authorities will begin gassing up to 10,000 geese which have settled within a 20km (12-mile) radius of the airport, according to the DutchNews.nl website. The airport authority argues that the cull is needed to prevent accidents. The force of a jet hitting a flock of geese or even a single bird can cause a plane to crash, and in 2010 a Maroc Air flight made an emergency landing at Schiphol after a strike.

Airports around the world have struggled to come up with effective solutions to prevent bird strikes. Heathrow lets the grass around the runways grow long, discouraging birds from nesting as they cannot see predators. Radar systems to detect large number of birds above runways are also used at many airports.

After the first cull of about 5,000 geese at Schiphol last summer, (cont'd on page 3)

High Risk Events Continue Unabated

A Virgin Atlantic A-330, departing Orlando International in January, struck a flock of ringed necked ducks on departure. The aircraft ingested birds into both engines and showed strike evidence on its radome, flaps and leading edge devices. One engine was shutdown due to low oil pressure and the other engine suffered ingestion damage. Despite its high gross weight and using only one damaged engine the crew returned the aircraft to MCO safely. The UK AAIB is investigating.

At Dallas-Ft. Worth, in April, an MD-80 (cont'd p.3)

FAA initiates new ARAC on Engines

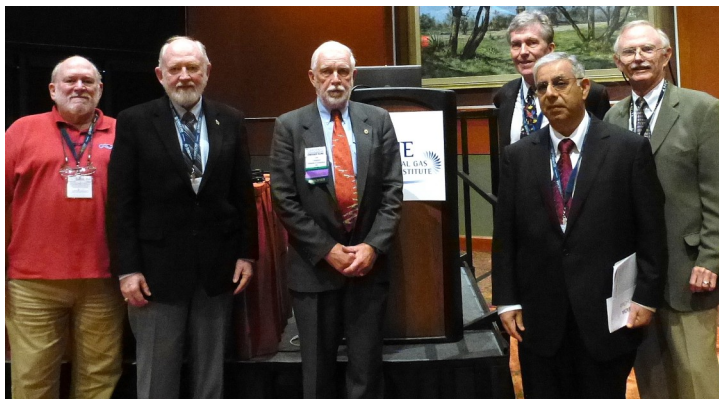
The FAA's Engine and Propeller Directorate has formed a new industry ARAC to address four issues concerning bird hazards to engines:

1. evaluate deficiencies in the current rule regarding core ingestions;
2. Evaluate large flocking bird requirements to ensure the safety standard is being maintained in mid-sized engines
3. Evaluate NTSB recommendations regarding engine-bird ingestion standards
4. Define an 'industry led' process for periodic review of data which ensures that government & industry maintain an awareness of the bird threat.

The ARAC was formed in April, 2013 and should start work shortly. Typically results are completed in about two years. Changes in engine robustness would be phased in over a period as long as 20 years.

ASME Discusses Bird Problem with Engines

The American Society of Mechanical Engineers annual meeting—Turbo Expo—was held in San Antonio the first week of June, 2013. The International Gas Turbine Institute hosted a three hour panel discussion on the subject of bird hazards to engines and aircraft. This was the first panel of its kind hosted by ASME in many years. Panel members discussed the hazard in general and several specific areas: gap analysis and lack of a systemic approach to the problem, flight crew actions, manufacturers' view from both the airframe and engine perspective, research efforts currently underway and the World Birdstrike Association. Unfortunately neither regulatory personnel nor airport wildlife control experts were able to attend or participate.



Participants (L-R): Dr. Ed Herricks, Univ. of Illinois; John C. Dalton, the Boeing Company; Dr. Lee Langston, co-chair; Les McVey, GE Aircraft Engines; Dr. Aspi Wadia, co-chair and GE Aviation; Capt. Paul Eschenfelder, Embry Riddle Aeronautical University; not pictured—Dr. Nick Carter, WBA

High Risk Events (cont'd from p. 1)

of American Airlines suffered a dual engine ingestion of birds on climbout. The aircraft returned safely.

Interestingly no U.S. regulatory guidelines nor governmental advisory agency advice recommends or requires airport users to contact the airport operator when such a high risk event occurs. And, in these cases, they did not. ICAO safety management guidelines, however, sets gap analysis as a standard. These cases of high risk certainly indicate gaps in our program, but they are gaps unaddressed in the manner in which the U.S. currently handles the problem.

In Italy in July, 2012, a British Airways B737, departing Genoa, suffered a dual engine ingestion of gulls on climb out. One engine was shut down in flight and the other on the runway immediately after landing due to severe vibrations. The Italian ANSV declined to investigate the matter.

At Amsterdam in March, 2013, an Easyjet A-319 struck a flock of white fronted geese on climbout and had to shut down one engine. The flight returned safely to EHAM. See the accompanying article on the goose cull program ongoing at Amsterdam.

Amsterdam goose cull (cont'd from p. 1)

bird flights over the runway reduced by 90 per cent, authorities reported at the time. But animal protection groups say aviation authorities should find alternative methods, such as changing the type of crops planted near the airport to discourage the birds from settling there.

The Dutch animal rights group Fauna Bescherming calls the government's policy "incomprehensible".

The Independent

Bloomberg Crows over Waster Transfer Station

The Bloomberg administration was crowing Tuesday about a court victory against opponents of a garbage transfer station near LaGuardia Airport in Queens. The opponents claim the trash will attract birds, posing a threat to aircraft like the US Airways plane that pilot Chesley Sullenberger landed in the Hudson River after a bird strike in 2009. Sullenberger last year lent his voice to the opposition. But the administration insists the College Point transfer station will be safe. Various courts have now ruled 11 times "against those who don't want to bear their fair share" of the garbage load, a Bloomberg spokesman said in a statement. Pilot Ken Paskar and Friends of LaGuardia Airport filed several legal challenges to the project, the last of which was dismissed Tuesday by a federal appeals court. The city said the station is nearly complete, adding that the lawsuits haven't hindered construction.

NY Daily News

Accident Reports

In a change from our previous recitals of birdstrike accidents, incidents and high risk events the following official accident reports are listed. A summary is provided and an online link attached for further information. As some reports are not published in English translations have been made by the provider.

Report: Jeju B738 at Seoul on Dec 4th 2011, flock of birds, both engines operating at severe vibrations

The South Korean ARAIB released their report on the Jeju Air B737-800 accident at Seoul's Gimpo Airport in December, 2012. Both CFM56 engines ingested ducks at around 200 feet on climbout. Both engines received "serious" damage and "severe" vibrations due to the ingestions. The aircraft was able to make an immediate and safe return to Gimpo.

The ARAIB found that:

"The flock of migratory birds was not detected so that takeoff was not delayed"; and that "Gimpo Airport has no effective system to detect movements of migratory birds".

An English translation of the report can be viewed here:

<http://avherald.com/h?article=45f2e966&opt=0>

Report: Asiana Airlines A330-300 at Seoul on Dec. 25, 2011, flock of birds.

Similar to the report above, an Asiana A330 with 271 souls on board struck a flock of white fronted geese on climbout at about 600 feet. The right engine ingested at least one goose and was damaged. The aircraft returned safely to Seoul.

The ARAIB found that:

"the takeoff was not delayed despite the presence of birds in the departure path."; and that "Gimpo Airport has no effective system to detect movements of migratory birds".

An English translation of the report can be viewed here:

<http://avherald.com/h?article=45f2f10f&opt=0>

Birdstrikes are predictable and repeatable unless proper mitigation is employed, which includes policy for flight crews—Editor

Italian government reports

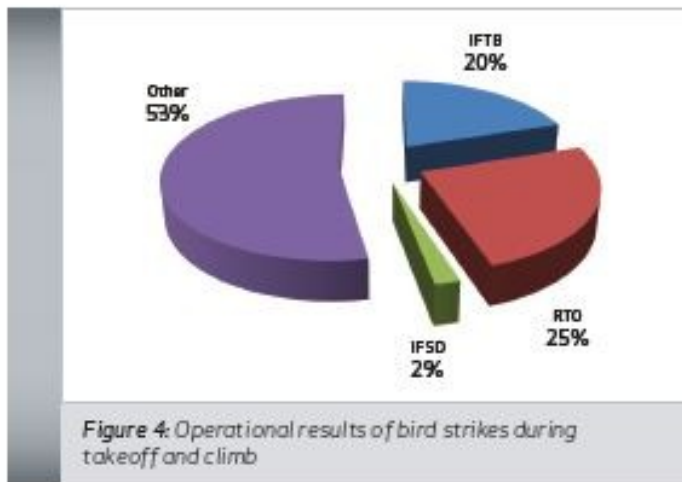
The Italian ENAC (CAA) released their safety report for 2012. In it they found that birdstrikes were up 2.8% despite air movements being down 4.5%. This was attributed to an increase in 'wildlife in the airport environment'.

The Italian ANSV (TSB) stated in their report that the birdstrike issue is 'under control' and there were no incidents to be investigated, despite the BA 737 dual engine damage at Genoa. Both reports can be linked here: http://www.birdstrike.it/en/index.php?Archive_2013

Engine damage (cont.)

The booster and high-pressure compressor can also be affected when birds or bird parts are ingested through the core section. Engine damage after a bird strike is usually proportional to the size of the bird and the thrust setting. This generally results in a stall with N1, N2 fluctuations and EGT increase. All CFM56 engines are stall/surge free, and if there is no hardware damage, the stall should self-recover. If either moderate damage or a large quantity of ingested matter result in a non-recoverable stall, reducing the throttle to idle for a while may help the engine to recover (see Summer 2009 Newsletter, "Understanding and managing compressor stalls/surges").

During takeoff and climb, approximately **20%** of engine bird strikes result in an In-Flight Turn Back (IFTB), **25%** in a rejected takeoff (RTO), and only **2%** require an IFSD. It is not reasonable to expect that engines can accommodate all hazards under all conditions, since there are always inherent design and technology limits.



CFM Flight Ops Newsletter—#4

The most recent CFM Flight Ops newsletter carried interesting information for engine operators on the hazards of bird ingestions.

Part of their findings is reproduced to the left. They make two key statements of interest to the airport wildlife control community:

1. almost half (47%) of birdstrikes result in some effect on the flight—air turn back, abort take-off or engine shut down.
2. There are inherent design and technology limits to the engines.

The CFM engine is an extremely popular engine powering many mid-sized aircraft such as B737 and A320. Some engine models power larger aircraft such as A-340.

New Feather Identification Opportunity

Tel Aviv University's Feather Identification Lab is offering its services in the identification of birdstrike remains. The Feather Identification Lab's main goal is to identify feather remains (mainly from air strikes) to the lowest possible taxonomic level. As the only Feather Identification Lab in the region we have been successfully identifying feathers remains for the Israeli Air Force, the Israel Airports Authority, the Civil Aviation Authority and the Israel Nature and Parks Authority.

Through the years the Feather Identification Lab acquired tremendous experience in identifying feather remains and is operated by highly experienced personal.

We are looking forward to collaborations with anyone that is interested in identification of feathers and feather remains and will be happy to provide this service.

Please do not hesitate to contact us.

Contact: Dr. Roi Dor, Curator of Birds, Zoological Museum, Steinhardt National Collections of Natural History; Tel. 03-6409811, roidor@post.tau.ac.il.

Score card

In an effort to contrast the hazard of birdstrikes and its risk with other natural hazards encountered by aviation every day, the following score card is offered. Data is worldwide and since our last newsletter was published in 2012.

Wind shear fatalities:	none
Icing fatalities:	8
Volcanic ash fatalities:	none
Bird strike fatalities:	20

India Buys Bird Radars

As congestion increases, avoiding collisions between aircraft and birds is becoming a more pressing issue. The Indian Air Force, which conducts many operational and training flights and often at very low level, attributes around 10 percent of accidents to bird hits. It took the lead last year by issuing global bids to four companies for 45 bird detection and monitoring radar systems (BDRS) to be installed at airports and air bases across India.

India's civil and military aviation is hugely affected due to the absence of key infrastructure and with little control over abattoirs and rubbish dumps dotted on the outskirts of airports. Civil airports are also considering the acquisition of these radars to monitor and look for birds at their approach and takeoff funnel, and inform the pilots in advance to ensure action can be taken on time, said Bimal Sareen, managing director and CEO at AVAANA and director at OIS (Hall 5 Stand D281), one of the bidders for the IAF requirement. The OIS scanning multi-beam antenna, operating in marine X-band frequency, provides altitude, position and vector of the birds over a 12-kilometer diameter circular region reaching 1,000 meters in altitude over the runway itself, and up to 2,000 meters at the extreme range limits to the air traffic controllers. "The system can detect a small bird (equivalent of SAT 1 defined by FAA) up to a distance of six kilometers," said Sareen. Netherlands-Robin Radars, Merlin Radars and Canada's Accipiter are also believed to be in discussions about supplying avian radars to India.

An avian radar system tracks birds or other airborne targets within its 3-D surveillance volume, characterized by a cylinder with an approximate range up to 10 kilometers and up to 10,000-foot altitude above ground level. Special scanning methods form 3-D target trajectories using track data and volume-revisit times. Regular updates provide situational awareness of developing hazards, allowing operators to take action.

AINonline

Bird radars are currently in use in Europe, Africa and now India; in the U.S. at USAF bases only. Currently no bird avoidance radars are in operational use at US airports—Editor

Qualified Airport Biologist Listing

Based on industry and airport community request, Embry Riddle Aeronautical University is, once again, vetting resumes of biologists who seek to work on airports. Under FAA Advisory Circular 150/5200-36 only biologists who qualify may conduct wildlife assessments on airports. As both airports and biologists have said they were having difficulty determining qualification, ERAU has set up a panel of experts who review biologists qualifications. If the applicant appears to satisfy the criteria in the Advisory Circular, the applicant's name is posted on the ERAU website.

A list of qualified biologists and applications for listing can be found on the web at: <http://wildlifecenter.pr.erau.edu/biologists.php>.



NEXT WILDLIFE HAZARD TRAINING SESSION

Embry-Riddle has scheduled its next airport wildlife training seminar for the Dallas-Ft. Worth International Airport on July 31– August 2, 2013.

This seminar is currently the only training taught by professional educators with over 100 years experience in aviation safety & wildlife control. It is acceptable to the FAA Administrator to fulfill the FAA's training requirements of Advisory Circular 150/5200-36.

The seminar is three days in length. The first two days consist of classroom sessions led by the nation's top wildlife management experts. These sessions allow for plenty of interaction with the instructors, opportunities for questions and networking with fellow participants. Day three features a field trip to the host airport, during which hands-on wildlife mitigation exercises will be performed and mitigation techniques discussed.

Participants who successfully complete the seminar will receive a certificate of completion and continuing education units (CEU) from Embry-Riddle Aeronautical University.

You may register online at Embry-Riddle's website <http://proed.erau.edu/seminars-workshops/wildlife/index.html> or call 866-574-9125 for more information.

UK Birdstrike Committee Meeting Minutes—2013

The United Kingdom's Birdstrike Committee Annual meeting was held in York this month. As the meeting minutes are 13 pages in length, only a summary will be presented below. A full copy of the minutes can be viewed now at Embry Riddle's *Center for Wildlife and Aviation* website at: <http://wildlifecenter.pr.erau.edu/resources/UKBSCDraftMinutesOfMeeting2013.doc>. Minutes of the previous meetings and presentations can be viewed at the UK CAA's website: <http://www.caa.co.uk/default.aspx?pageid=9820>

1. Although held in York the meeting consisted of the highest attendance since UK BSC started.
2. Sponsors from 5 companies, including De Tect, JSA TONI, ROBIN, and Volacom briefed their products prior to presentations on Day 2.
3. CAA reported on their efforts to solicit aircraft maintenance companies and ground handling companies to collect and report birdstrike information.
4. Action item report from 2012, pigeon racing, was received. Some pigeon racing clubs have become proactive in moving their release sites away from areas which may impact aircraft operations.
5. CAA was unable to include pigeon lofts in an updated safeguarding circular as a change to Safeguarding requires legislative action.
6. Action item report from 2012, European BSC, the UKFSC has not acted on the recommendation to instigate an European BSC via ECAS, but CAA will continue to monitor and share information with EASA.
7. Airclaims delivered a report concerning the cost of birdstrikes to airline operators. Examples were cited based upon specific incidents.
8. CAP 772 changes were briefed. Essentially there were 11 changes to CAP 772 to modernize the document and require risk analysis methodologies.
9. FERA conducted an in-depth analysis of birdstrike reporting. Strike reports are undoubtedly up. Waterfowl strikes were increasing.
10. The issue of Class Licence was discussed at length. Difficulties for airport operators in administering and complying with this requirement were discussed.
11. Rolls Royce gave a presentation regarding the design and certification of jet engines for birdstrikes.
12. Five presentation were made on Day 2 from various corporate sponsors.
13. CAA stated that increasingly the subject of birdstrikes requires collaboration and multi disciplinary approach from all stakeholders, not just regulators, in order to identify hazards and manage/reduce risk. New innovations and technological solutions combined with effective use of strike data, using best-practice SMS methodologies combined with trained competent people working to effective policies and procedures, in tandem with discussing the risks with all stakeholders is how birdstrike risk reduction can show results.