

An aerial photograph of an airport terminal and control tower. The terminal is a long, low building with several gates. A control tower stands prominently in the center. In the background, there is a lush green hill with some buildings and a tall antenna tower. The sky is clear and blue. The text is overlaid on the top half of the image.

Wildlife Hazard Assessment of Puropollo Industry

**Dr. Nicholas Carter
Birdstrike Control Program**

Significant Risk Factor for Potential Bird Strikes





Numerous Black Vultures



Average Black Vultures = 2.0 kg



**Modern engines rated for 1 kg
bird ingestion**



Single bird – kestrel (115 gm)

Domingo 2 de noviembre de 2008

Inicio/País

Gallinazos ponen en riesgo seguridad del aeropuerto de Barranquilla

“VEO MUCHAS aves en la aproximación, es una nube negra... ¡Esto es alarmante!”. La frase que parece salida del guión de la película Los pájaros de Hitchcock, es ya común entre pilotos y controladores del Aeropuerto Internacional Ernesto Cortissoz de Barranquilla, incluida hace poco en el TLC con Estados Unidos como ciudad de cielos abiertos.



Attracted to odor and chicken carcasses



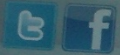
**Less than 1 km
Immediately after V-1**

gas
OS
M

Puropollo

Cuando trabajas
Ahí estamos

Equipo de protección



3M





**In the US, hawks and vultures represent 93.4 %
of down-time for civilian aircraft bird strikes.
(\$72 million over 22 years)**

**64% of damaging strikes to US military
aircraft.**

**1.3% of all reported strikes –
6.7% of all damage**

**54% of all vulture strikes cause damage
33% have negative effect on flight =
87% of vulture strikes have significant effect**

Table 19. Ranking of hazard level of 108 bird and 12 terrestrial mammal species with 30 or more reported strikes with civil aircraft in USA, 1990-2011 (Table 17), based on a composite of the percent of strikes causing damage, major damage, and a negative effect-on-flight (EOF) (page 1 of 4)^{1,2}.

Hazard rank	Wildlife species	Total reported strikes	Percent of strikes with:			Mean hazard level ³
			Damage	Major damage	Neg. EOF	
	Birds					
1	Snow goose	101	78.2	40.6	37.6	52.1
2	Black vulture	74	63.5	32.4	40.5	45.5
3	Northern pintail	101	54.5	19.8	33.7	36.0
4	Turkey vulture	444	50.5	17.8	34.9	34.4
5	Canada goose	1,351	50.1	16.5	27.5	31.4
6	Brown pelican	55	43.6	12.7	36.4	30.9
7	Bald eagle	147	41.5	11.6	28.6	27.2
8	Northern shoveler	38	47.4	18.4	13.2	26.3
9	Sandhill crane	108	39.8	12.0	26.9	26.2
10	American wigeon	43	44.2	14.0	18.6	25.6
11	Double-crested cormorant	90	35.6	15.6	24.4	25.2
12	Greater sage-grouse	31	38.7	12.9	19.4	23.7
13	Wood duck	35	34.3	14.3	14.3	21.0
14	Wild turkey	54	29.6	3.7	25.9	19.8
15	Ring-necked pheasant	66	25.8	13.6	19.7	19.7
15	Gadwall	39	33.3	10.3	15.4	19.7
17	Green-winged teal	38	31.6	5.3	18.4	18.4
18	Common raven	31	25.8	9.7	16.1	17.2
19	Ruddy duck	31	32.3	9.7	6.5	16.1
20	Mallard	633	23.9	9.0	12.2	15.0
20	Osprey	214	22.9	7.5	14.5	15.0
22	Great blue heron	273	20.5	5.9	16.8	14.4
23	Glaucous-winged gull	77	22.1	3.9	13.0	13.0
24	American coot	121	21.5	5.8	9.1	12.1
24	Laysan albatross	33	21.2	0.0	15.2	12.1
26	Great egret	59	16.9	3.4	13.6	11.3
27	Red-tailed hawk	1,471	15.6	4.9	11.1	10.6
28	Cattle egret	240	10.4	3.3	15.4	9.7
29	Western gull	88	12.5	8.0	8.0	9.5
30	California gull	101	10.9	6.9	8.9	8.9
31	Great horned owl	142	15.5	3.5	6.3	8.5
32	Swainson's hawk	72	12.5	2.8	9.7	8.3
33	Herring gull	949	9.9	4.8	9.2	8.0
34	Rock pigeon	2,158	10.3	3.7	9.8	7.9
35	Dunlin	30	10.0	3.3	10.0	7.8

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Obstacles



Outside of airport



Denial / Uncooperative

Motivations

- 1) Don't want to spend money
- 2) No reason to cooperate
- 3) No incentives

Potential Resolutions

If a strike with a vulture occurs, who suffers?



Potential Resolutions

Reason behind attractant is odor, improper disposal

Need to secure funds for waste removal



Potential Resolutions

- 1) Create a working group to resolve the issue (Puropollo, Airlines, Airport, Local Authorities)**
- 2) Request methods of resolving issues from participants**
- 3) Determine costs of modifying waste removal process and develop implementation plan**
- 4) Divide money requirements amongst participants
($\frac{1}{4}$ airport, $\frac{1}{4}$ Puropollo, $\frac{1}{2}$ Airlines)**

Potential Resolutions

Average damage cost per any vulture strike

\$23,818 per strike

With other associated costs

\$83,500 per strike

16 5:34 PM

Improvements to System

If no cooperation:



Improvements to System

If no cooperation:

NOTAMs

<i>From</i>	<i>ICAO</i>	NOTAM (specific)	<i>EU route</i>
2005-06-29	ESGG	<u>TWY F CLSD DUE ASPHALT...</u>	
2005-08-01	EKCH	<u>RWY 04L CLSD FOR TKOF AND...</u>	
2005-08-04	ENOR	<u>TRIGGER NOTAM - PERM...</u>	
2005-07-14	EKCH	<u>CAT II RWY 04L NOT AVBL....</u>	
2005-08-04	BIRD	<u>TRIGGER NOTAM AIP AIRAC...</u>	
2005-06-30	ENAT	<u>REF AIP NORWAY, AD2 ENAT...</u>	
2005-06-29	ESGG	<u>TWY F CLSD DUE ASPHALT...</u>	

Improvements to System

If no cooperation:

NOTAM (specific)

Field observer(s) & ATC



Improvements to System

If no cooperation:

NOTAM (specific)

Field observer(s) & ATC

**Work with airlines to modify flight
schedules**

Improvements to System

If no cooperation:

NOTAM (specific)

Field observer(s) & ATC

**Work with airlines to modify flight
schedules**

Warning system

Active Management

If no cooperation:

RC Aircraft



Active Management

If no cooperation:

RC Aircraft

CAPA



Active Management

If no cooperation:

RC Aircraft

CAPA

**Legal/political route
(Documentation with data)**

Ave golpeó ala de Fokker



Para ahuyentar las aves de los aeropuertos, se utilizan halcones robot o, de manera más artesanal, con estallidos de pólvora. (Foto: Archivo/VANGUARDIA LIBERAL)



Un ave, al parecer un chulo, golpeó ayer el ala derecha de un avión de la empresa Avianca que cubría la ruta

Palabra clave:

Publicidad

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Garaje** en Comidas
Rápidas - Guía de
Restaurantes

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Ranking de noticias

Motociclistas de Bucaramanga anuncian marcha para este viernes

Ecuador es un rival complicado: Pibe Valderrama

En las protestas hay un componente de criminales: Ministro de Defensa

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