



ICAO, World Birdstrike Association & CARSAMPAF

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National Databank Interactions Strike Reporting & Brazilian Species Hazard Ranking

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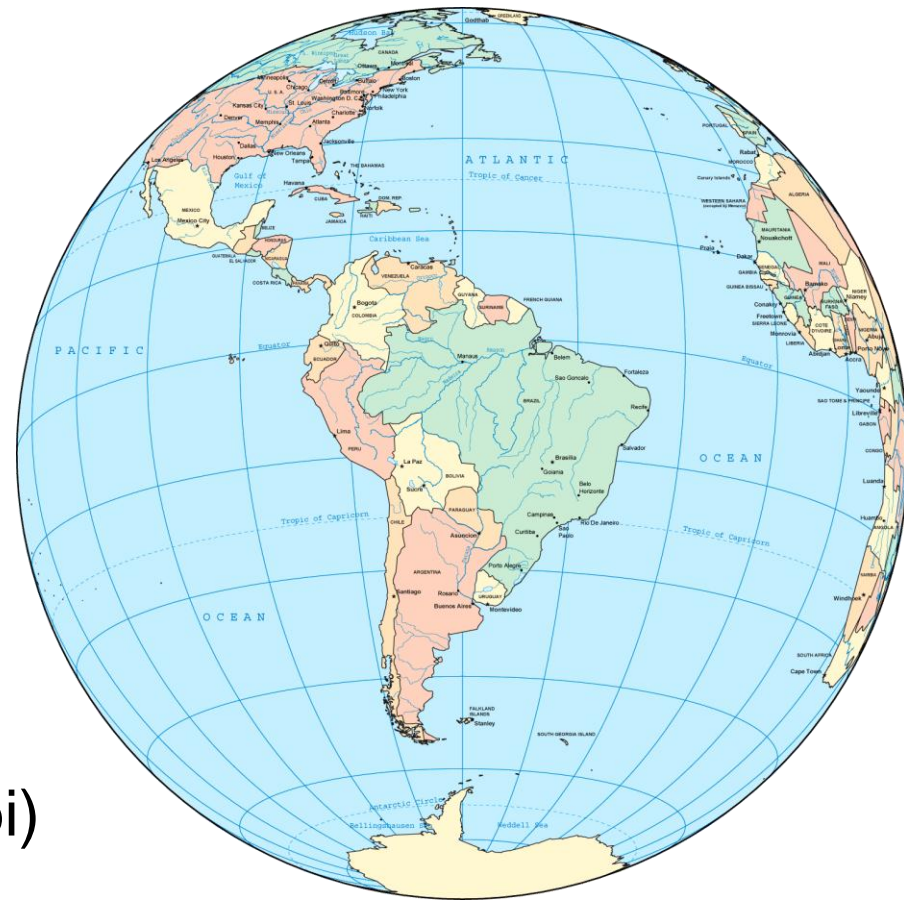
Structure

- Introduction
- Data & Wildlife Strike Management
- Ranking the wildlife strike risk of the Brazilian species to aviation
- Conclusions

Introduction

Brazil

- 714 public airports
- Regional airports (BRL 7,3 bi)
- Movements **2,042,726** (2013)
- International movements **159,706** (2013)





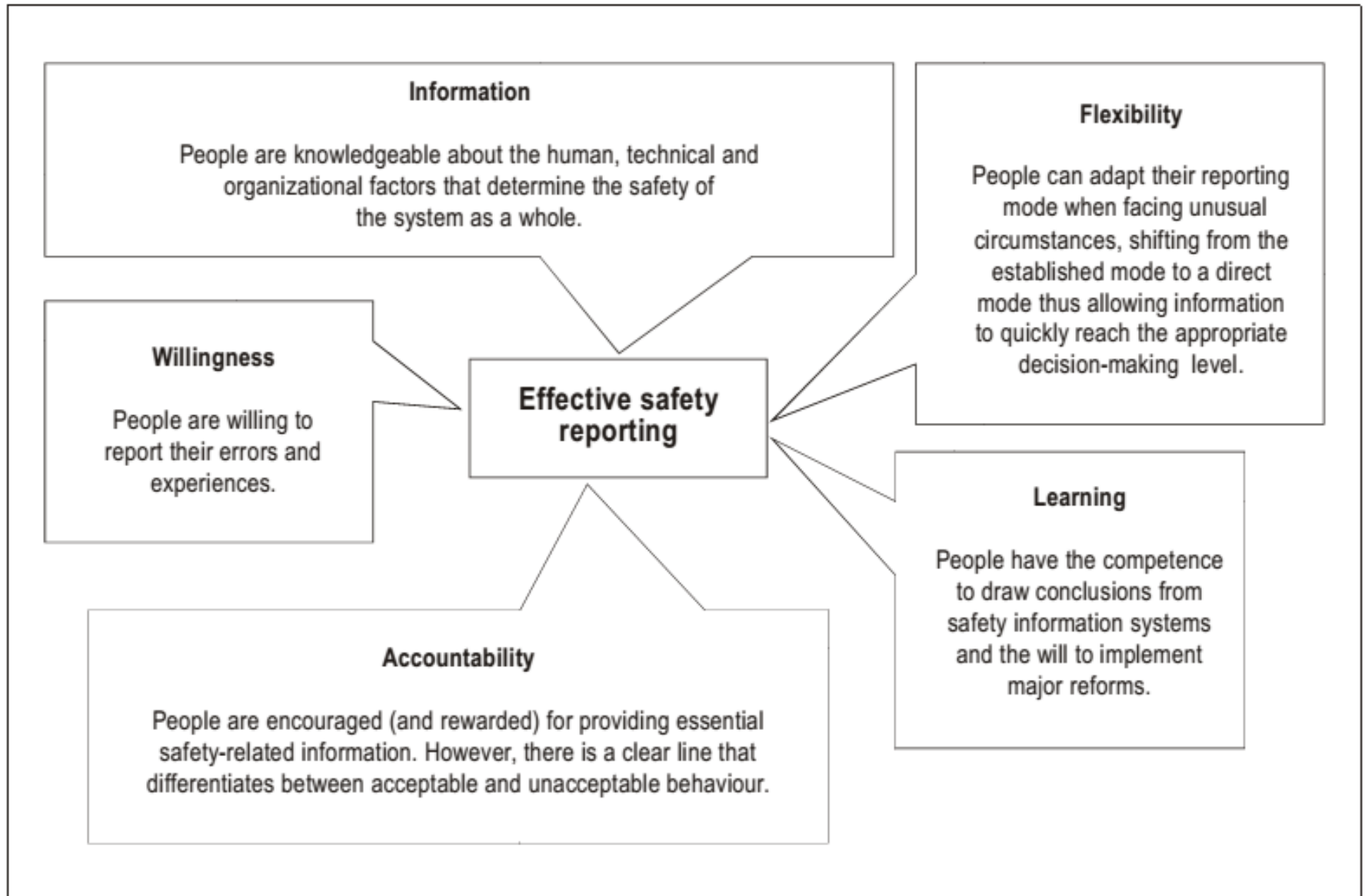
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Data & Wildlife Strike Management

- Doc 9859 Safety Management Manual
- Doc 9332 ICAO Bird Information System
- Doc 9137 Wildlife Control & Reduction

Doc 9859 SMM



Reporting Culture

(Reason 1997)

Potential informants cannot always see the value in making reports, especially if they are sceptical about the likelihood of management acting upon the information

Important factors for both quantity & quality of incident reports:

- Rapid, useful, accessible and intelligible feedback to the reporting community (*beyond borders*)
- Ease of making the report

1) Reports from Brazilian airlines operating abroad

2) Reports from foreigner airlines operating in Brazil

Doc 9332 IBIS

- State Letter AN4/9.1-79/179 Nov 23rd 79
 - Report all bird strikes to ICAO
- ACF OPR normally send strike reports to their State for onward transmission to ICAO and to the State of occurrence
- It is essential that the State of the occurrence be advised **ASAP** to ensure that the appropriate ARP authorities are aware of the bird strike and can take action

Effective communication is paramount!

And time is an important issue!

Doc 9332 IBIS

- Postal addresses for States' civil aviation authorities can be found in the State Designators for Civil Operating Agencies and Airports (Doc 8585)
- States are requested to complete as many of the data items on the report

Effective communication is paramount!

And time is an important issue!

Doc 9137 WCR

- The Importance of Reporting
 - An effective bird/wildlife control programme depends upon accurate and reliable reporting
 - Reviewing and analyzing this data will help identify problems at the airport and indicate the effectiveness of current WHMP
 - Annex 14, Volume I, requires States to assess the hazard on, and in the vicinity of, an aerodrome through the establishment of a national procedures for recording and reporting strikes

What is the problem?

- 1) Effective communication is paramount and time is an important issue
- 2) Reports from Brazilian airliners operating abroad and foreigner airliners operating in Brazil shall arrive at the appropriate databank
- 3) On line reporting systems facilitate data gathering

Brazilian ND available in English at:

<http://www.cenipa.aer.mil.br/cenipa/sigra/perigoAviarioExt?idioma=en>



Sistema de Gerenciamento de Risco Aviário - Sigra

WILDLIFE EVENT REPORT FORM - (Ficha CENIPA 15)



Type of Event Strike Near-miss Sighting



Mandatory information

Warning!

All information herein contained has the solely purpose of wildlife strike accident prevention. Inappropriate use of the system should be avoided since data is the milestone of Safety Management System and its misuse impairs reporting by aviation stakeholders. The annual data summary feeds International Civil Aviation Organization databank in order to support the development of strategies to mitigate wildlife strike risk.

Registration ANV: AIRCRAFT Date: 00/00/0000

AIRCRAFT

Operator: -- Choose an option --

Manufacturer: -- Choose an option --

Model: -- Choose an option --

TYPE OF AVIATION -- Choose an option --

EFFECT ON FLIGHT

- None
- Aborted take-off
- Destabilization in the approach path
- Other
- Not reported
- Precautionary landing
- Engine shut down / flame-out

Engine was shut down by pilot or stopped running because of strike.

SKY CONDITION -- Choose an option --

Precipitation: -- Choose an option --

Engine was shut down by pilot or stopped running because of strike

AERODROME ?

ICAO indicator or name:

Runway used(direction of use): Ex.: 12R

OUT OF AERODROME / EN ROUTE

Aerodrome Safety Area (ASA): ?

Coordinates /Radial & Distance: ?

HEIGHT (AGL): ft ? SPEED (IAS): kt ?

PHASE OF FLIGHT ?

Taxi
 Take-off
 Climb
 Cruise(en route)
 Descent
 Approach
 Landing
 Runway review
 Low Level Nav
 In-Transit Inspection
 Parking

PART(S) OF AIRCRAFT ?

Struck	Damaged
<input type="checkbox"/>	<input type="checkbox"/>
Radome	
<input type="checkbox"/>	<input type="checkbox"/>

DAMAGE / COST INFORMATION ?

Aircraft time out of service: Hours

Direct cost (inspection/repairs/replacement of items): ? US\$ US\$

Indirect cost - Estimated (lodging/profit losses): ? US\$ US\$

PILOT WARNED OF ANIMALS? ?

ATIS, APP, TWR, NOTAM ?

ADDITIONAL REMARKS

Describe personal injuries, aircraft damage, significant bird concentrations, attractants on the ground, estimated loss of thrust engine vibration, fire or any other valuable information.



From 200ft AGL up to the end of landing run, or, in other words, up to the aircraft reaches the taxiing speed and vacates the RWY. For helicopters up to the hovering close to the ground or wheels on ground for taxiing or the end of the landign run



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Ranking the wildlife strike risk of the Brazilian species Optimizing the fauna management at airports

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Ranking the wildlife strike risk of the Brazilian species

- Brazilian database: 11,026 wildlife strikes (2000-2013)
- 5,878 reports (53%) were identified to species or group level
- The ranking was based on three severity criteria:
 - 1) Percentage of damaging strikes,
 - 2) Percentage of strikes with negative effects on flight (EOF),
 - 3) Percentage of strikes that resulted in substantial damages
- 74 wildlife species or groups presented by the ranking

Ranking the wildlife strike risk of the Brazilian species

Very High Risk Species

Rank	Severity	Specie or Group	Damages %	EOF %	Substantial Damages %	Severity Score
1	very high	Frigatebirds	20,0%	55,0%	5,0%	10
2	very high	Cattle Egret	14,3%	14,3%	7,1%	19
2	very high	Other vultures	11,6%	40,9%	2,1%	19
2	very high	Lesser Yellow-headed Vulture	14,3%	14,3%	7,1%	19
5	very high	Black Vulture	25,6%	56,4%	-	20
6	very high	Turkey Vulture	14,3%	19,0%	4,8%	22
7	very high	Greater Yellow-headed Vulture	28,6%	28,6%	-	23

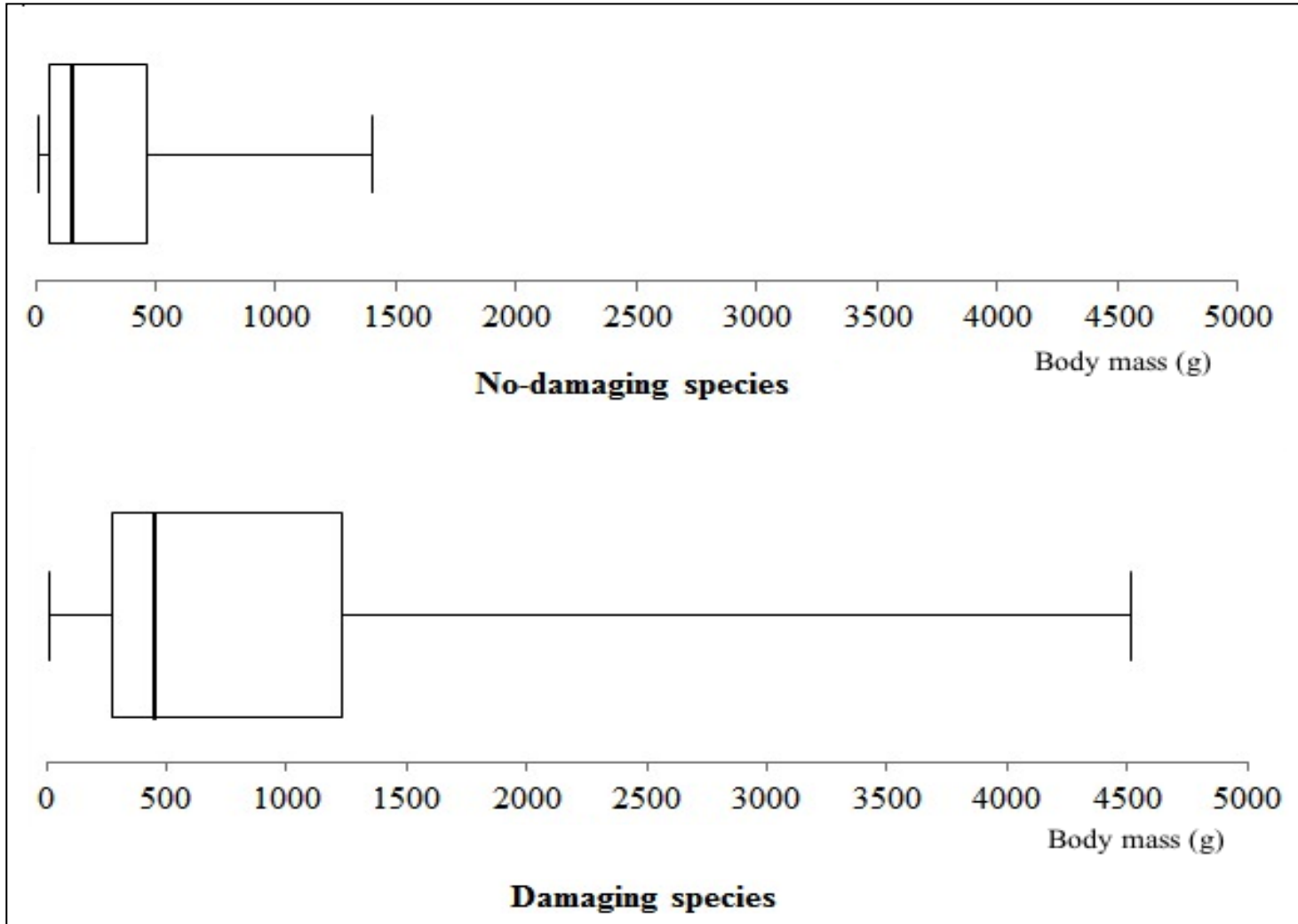
Ranking the wildlife strike risk of the Brazilian species

High Risk Species

Rank	Severity	Specie or Group	Damages %	EOF %	Substantial Damages %	Severity Score
8	high	Gulls	6,3%	32,6%	1,1%	33
8	high	Brown-chested Martin	11,1%	22,2%		33
10	high	Yellow-headed Caracara	10,0%	20,0%		37
11	high	Domestic dogs	5,3%	26,3%		43
12	high	Fork-tailed Flycatcher	9,1%	9,1%		45
13	high	Other ducks	5,9%	5,9%	5,9%	47
14	high	Southern Caracara	5,2%	6,8%	1,2%	51

Ranking the wildlife strike risk of the Brazilian species

Frequency distribution of body masses for birds involved in strikes





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Conclusions

Recommendations

- 1) Reports shall arrive at the appropriate National Databank (ND)
- 2) Each State shall point to ICAO the correct ND electronic address to share strike reports ASAP
- 3) ICAO shall keep an updated list of ND addresses since not all countries have an on line system available

Conclusions

Findings

Comparing the Brazilian hazardous species to temperate zones' species:

- Brazilian hazardous species have smaller body mass involved in damaging strikes
- Neotropical region tends to show fewer large-sized bird species
- Damaging strikes involving small passerines like starlings jays, crows and ravens are lower than in others countries
- The hazard ranking helps airport's managers to prioritize efforts in order to reduce the presence of birds species posing the greatest risk to aviation
- Wildlife monitoring and site-specific surveys shall identify species abundance, indicating management measures to hazardous wildlife species

Acknowledgments

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Thank you very much!