

Seminar on Bird Hazards, Environmental Protection and Land Use at Airports for the NAM/CAR/SAM Regions

Miami, 24 - 27 April 2001

Agenda Item 1.3: ICAO Bird Strike Information System

(Presented by ICAO Secretariat)

1. Introduction

1.1 Since approximately 90% of all bird strikes occur on or in the vicinity of airports, the issue of bird strikes to aircraft is closely related to the operational safety of airports. The collection of information on bird strikes facilitates the identification of those locations with a high number of bird strikes and aids in the development of statistical databases which may be used to assess the seriousness of the problem. This bird strike data is also of use to aircraft and engine manufacturers, assisting them in the design of bird strike resistant structures and engines. For these reasons, the reporting of bird strikes by States is of great value at national, regional and global levels.

1.2 ICAO has been collecting bird strike data since 1965. However, it was not until 1979 that ICAO Contracting States were requested in ICAO State letter AN 4/9.1-79/179 dated 23 November 1979, to report all bird strikes to aircraft for input into a new data entry and retrieval system. The letter informed States that ICAO was developing new computer programmes for the storage and analysis of the data to be collected. To facilitate this data collection, an ICAO bird strike reporting form had been developed with the assistance of an advisory group of experts. Attachment A to the State letter contained the reporting form which was designed for direct reproduction by States in order to expedite its use and standardize the data collected. The State letter also contained guidance on the use of the reporting form. Since the form's introduction, it has gained wide acceptance and is now used as the principle reporting medium by those States which report bird strikes to ICAO.

2. IBIS data collection

2.1 The ICAO Bird Strike Information System has been in operation since 1980 and, at the present time, contains information on approximately 95 000 bird strikes.

2.2 The collection of information on bird strikes is basic to understanding and resolving the problem of bird strikes to aircraft. Bird strike reports supplied by States to ICAO are entered into a bird strike database and are used to produce an annual world statistical analysis as well as various studies of the data which are performed upon request from States and other interested parties. Those States which do not have bird strike data collection systems may use IBIS to analyse strikes which occur within the State or to nationally registered aircraft, if reported.

2.3 The majority of States which report to ICAO do so by sending copies of bird strike reports which occurred either within the State or to their aircraft operating in another State. Some States with a large number of reported bird strikes have developed data collection systems for storage and analysis of bird strikes and report to ICAO either on computer diskette or by sending files via the internet. However, the method of reporting to ICAO is not critical and States are encouraged to report all bird strikes by any method convenient to them.

2.4 In order to conduct accurate analyses of bird strike data, consistency of data collected is extremely important. Therefore, to ensure this consistency, States are urged to use the IBIS reporting form or file structure when reporting bird strikes to ICAO. Bird strike reporting forms should be filled out as accurately and completely as possible since even minor inconsistencies in reporting practices make comparative analyses of data difficult.

2.5 Discussions between ICAO and the International Air Transport Association (IATA) led to IATA member airlines adopting the IBIS bird strike reporting form and to the development of a supplementary reporting form, to gather information on operator costs and engine damage. Unfortunately, to date, the use of this supplementary reporting form has been very limited.

2.6 Information on the number and nature of bird strikes is required as a first step in developing a co-ordinated bird hazard control programme. When compared to the cost of the damage to aircraft caused by bird strikes, the cost of developing a bird hazard control programme is very little. Those States which have not yet developed such a programme and do not collect information on bird strikes, or report them to ICAO, are urged to do so.

3. Reporting and processing of bird strikes

3.1 Until the advent of the IBIS reporting form, (reproduced in Appendix A to this paper) a standardized bird strike reporting procedure did not exist. In fact, many different reporting forms were in use, and the data collected varied greatly. For the evaluation of bird strikes on an international level, it is especially important to have a standardized reporting format and all strikes that occur should be reported using this format. By using a standard reporting form for all airports within a State, it is possible to collect the data necessary to develop programmes tailored to the specific needs of the State. Similarly, when several States within a region have co-ordinated data collection programmes and report to IBIS, ICAO is able to assess the severity of the bird strike threat within the region and assist States through seminars and workshops.

3.2 Since the data is reported to IBIS in numerous formats, on several different media and in several different languages, the fields found on the reporting form must be filled as completely and accurately as possible to avoid inconsistencies which would make comparative analyses of data difficult. States which report data in a significantly different format from that required by IBIS are urged to comply with the format of the IBIS reporting form, especially when key data fields are omitted. Key data fields are considered to be those fields which are essential for the storage and analysis of the data. Some examples of key fields are the date of the strike, aircraft registration, aircraft make and model and the airport name. Omission of any data fields by a reporting State creates “a hole” in the data base, in effect weighting the data and lessening its accuracy.

3.3 To ensure the accuracy of all data contained within the IBIS data bases, numerous consistency checks are carried out during the data entry process. For instance, all aircraft registrations are verified for accuracy of aircraft make and model as well as engine make and model. Another example of

these verifications is the phase of flight and height above ground level (AGL), which are verified against one another, so that an aircraft is not reported as being above ground level when it is on its landing roll.

4. **Analysis**

4.1 When it is believed that all reports for a calendar year have been received, the data is analysed. The annual world analysis, which comprises annual world bird strike statistics as well as serious bird strike statistics is sent to all ICAO Contracting States as well as interested international organizations.

4.2 States are reminded that special analyses of the IBIS database can be made if requested in writing to the Secretary General of ICAO.

Appendix A

BIRD STRIKE REPORTING FORM

Send to: _____

Operator

Aircraft Make/Model

Engine Make/Model

Aircraft Registration

Date day month year

Local time

dawn **G_A** day **G_B** dusk **G_C** night **G_D**

Aerodrome Name

Runway Used

Location if En Route

Height AGL ft

Speed (IAS) kt

Phase of Flight

<i>parked</i>	G_A	<i>en route</i>	G_E
<i>taxi</i>	G_B	<i>descent</i>	G_F
<i>take-off run</i>	G_C	<i>approach</i>	G_G
<i>climb</i>	G_D	<i>landing roll</i>	G_H

Part(s) of Aircraft

	<i>Struck</i>	<i>Damaged</i>
<i>radome</i>	G	G
<i>windshield</i>	G	G
<i>nose (excluding above)</i>	G	G
<i>engine no. 1</i>	G	G
<i>2</i>	G	G
<i>3</i>	G	G
<i>4</i>	G	G
<i>propeller</i>	G	G
<i>wing/rotor</i>	G	G
<i>fuselage</i>	G	G
<i>landing gear</i>	G	G
<i>tail</i>	G	G
<i>lights</i>	G	G
<i>antenna</i>	G	G
<i>pitot/static</i>	G	G
<i>tail rotor (helicopter)</i>	G	G
<i>other (specify)</i>	G	G

Effect on Flight

<i>none</i>	G
<i>aborted take-off</i>	G
<i>precautionary landing</i>	G
<i>forced landing</i>	G
<i>vision obscured</i>	G
<i>engines shut down</i>	G
<i>fire</i>	G
<i>other (specify)</i>	G

Sky Condition

<i>no cloud</i>	G_A
<i>some cloud</i>	G_B
<i>overcast</i>	G_C

Precipitation

<i>fog</i>	G
<i>rain</i>	G
<i>snow</i>	G

Bird Species"

Number of Birds

	<i>Seen</i>	<i>Struck</i>
<i>1</i>	G_A	G_A
<i>2-10</i>	G_B	G_B
<i>11-100</i>	G_C	G_C
<i>more</i>	G_D	G_D

Size of Bird

<i>small</i>	G_S
<i>medium</i>	G_M
<i>large</i>	G_L

Pilot Warned of Birds

<i>yes</i>	G_Y	no
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Remarks (*describe damage, 46/47 injuries and other pertinent information*)

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Reported by

**Send all bird remains including feather fragments to:
(Optional)*

THIS INFORMATION IS REQUIRED FOR AVIATION SAFETY