

BIRD STRIKES IN GREECE - 2001 CIVIL AVIATION

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Abstract

This paper gives a brief summary of the bird strikes in Greece (Civil Aviation). It presents the results of bird strikes statistical analysis for the year 2001.

The paper contains the strike seasons, risk per airport, reporting operators, top ten aircraft manufacturers model. In addition, for the first time in Greece, we have data collected also from New Athens International Airport and we can now have some indication on the reported and indicated (actual) bird strikes in Greece. Finally, this paper proposes actions for the near and distant future.

Keywords: Aviation Safety Bird strike statistics, Bird Hazard Control, Civil Aviation, Conservation, Greece, Hellas, Hellenic Airports, Reporting, New Athens International Airport.

(This paper is the work of the author and may not reflect the full and final views of the organisations, by which is employed)

1. INTRODUCTION

Covering an area of 131,990 Km², Greece is a relatively small country, which is unique in Europe in that it combines its climate with a large variety and constant alternation of biotopes. This feature in conjunction with its geographical position makes Greece particularly important as regards the abundance and variety of the birds living there. Its position favours the concentration of many migratory birds when these travel over eastern Mediterranean to and from Africa. This paper refers to the consequences of the presence of birds in the Greek space as regards strikes with aircraft.

According to information provided by the International Civil Aviation Organization (ICAO) bird strikes registered in our country for all airlines, for the year 2001 were 13, a number which is considerable lower compared with the reports of other years.

2.METHOD

This paper is based on the elaboration of statistical data (note: only registered strikes in specific data collection forms) collected by the HCAA for 2001 from data received from ICAO and for the first time in Hellas for 2001 we have data from an airport as indicated bird strike . The airport is the New Athens International Airport (AIA), which commenced operations 28th of March 2001. From data gathered from environmental department of the AIA we know that for 2001 there were 43 cases of indicated bird strike as reported by the airport authority. ONLY 2 reports were submitted by the flight crews. That indicates that the problem of bird strikes in Greece is greater than expected, if only 5% of the actual bird strikes are reported.

As regards our analysis, the current problem is that no reports exist for all strikes and when they do, not all data has been filled in. Significant voids are noted in parts of the form referring to bird species. We have to understand that the reporter is always the commander (pilot in command). Pilots

are not familiar with bird species and often at the speed at which the strike occurred was such, that the reporter was unable to see or identify the bird species. Other, modern, identification methods (feather identification, DNA etc) have to be introduced in order to have correct data.

3.RESULTS

3.1. Number of bird strikes per month of occurrence

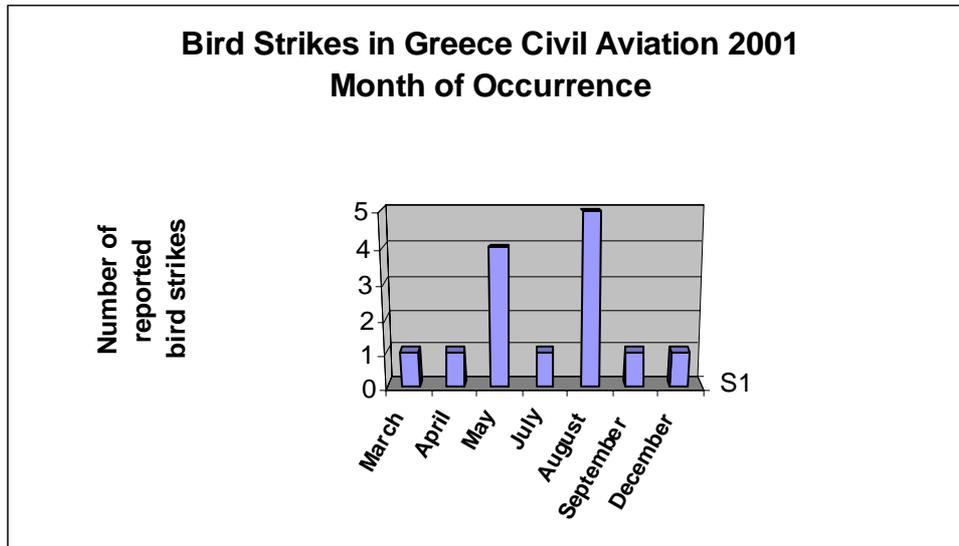


Figure 1.

In figure 1 we can see the months of occurrence of the bird strikes according to the ICAO reports. We can clearly that there is an increase of strikes from May to August. This may be due to three main reasons:

A) There is a significant increase in the number of flights (to more than 200%) at this specific time of the year as regards civil aviation aircraft.

B) The presence of a large number of birds during this specific period because of spring and autumn migration.

C) The presence of non-Hellenic flights (foreign airlines) along with their reporting culture of the flight crews we have more reports

Further study on the bird species of bird strikes is needed in order to extract scientific conclusions.

From previous research (Nikolaidis 2001, 2003) we know that, there is a significant increase of strikes because swallows live in Greece at that specific period and because the increase of strikes noticed in June and July coincides with the period of separation of youngsters which, as regards gulls, have wide dispersion from their colonies.

3.2. Evaluation of the risk of strike per airport

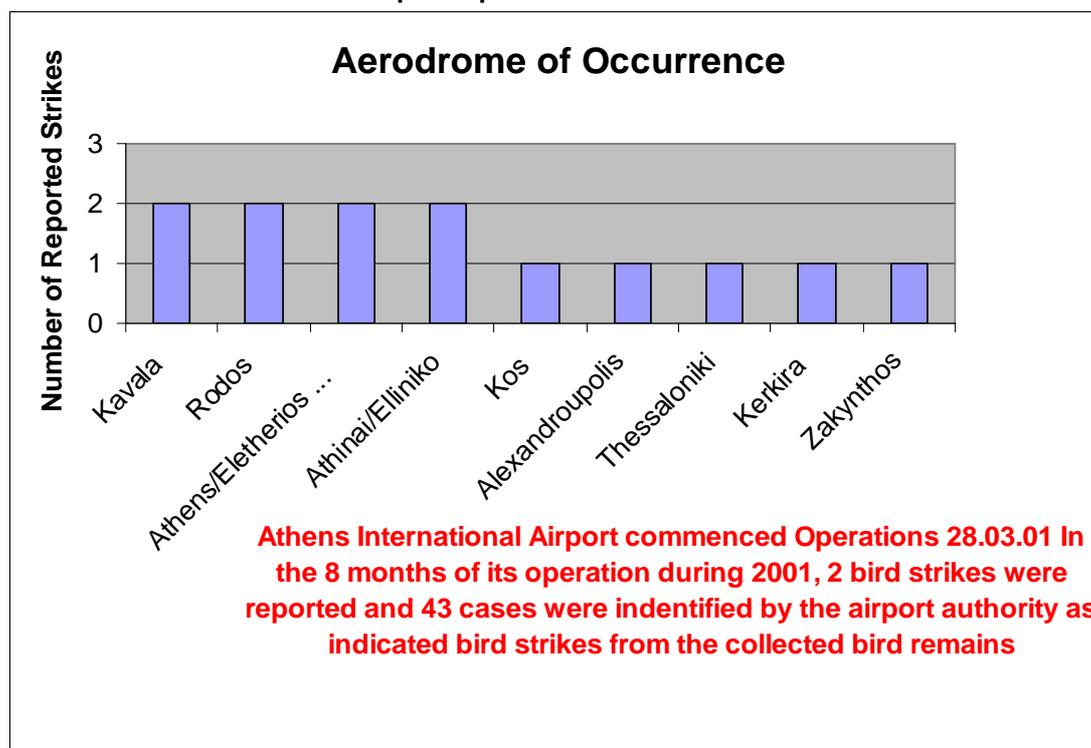


Figure 2

Aerodrome	Number of bird strikes per 10000 flights YEARS 1999-2000
Araxos	14,11
Kerkira	11,75
Kalamata	10,16
Kavala	8,31
Preveza	7,19
Naxos	5,02
Limnos	4,73
Zakynthos	2,34
Kos	2,33
Thessaloniki	2,17
Hios	1,19
Iraklion	0,97
Mikonos	0,84
Rodos	0,84
Samos	0,77
Mitilini	0,65
Khania	0,40
Athinai	0,25

Table 1.

On the basis of data from ICAO, the risk of strike was evaluated for specific airports of the country. In table 1 the evaluation is expressed as the number of bird strikes per ten thousand (10,000) flights for the years 199-2000. In table 2 the possibility is presented as percentage. It is the possibility of an aircraft to register a bird strike during the approach or departure to/from the specific airport and

it is based on the number of strikes that occurred in the specific and on the number of flights for this specific period. The data for the years after 2001 were taken from the Hellenic Civil Aviation data, as gathered from airports, and have to be considered as “potentially incomplete” as there are no data from other civil aviation authorities.

The risk of having a bird strike while approaching or departing from one of the following airport in a civil aviation aircraft is

Airport	2001-2004	1999-2000	1997-1998	Until 1996
Araxos	NO BIRD STRIKES REPORTS	0,14%	N/A	N/A
Kerkira	0,03%	0,12%	0,03%	0.06%
Kalamata	NO BIRD STRIKES REPORTS	0,10%	N/A	N/A
Kavala Chrisoupoli	0,07%	0,08%	0,37%	0.14%
Preveza	0,02%	0,07%	0,05%	0.109%
Naxos	NO BIRD STRIKES REPORTS	0,05%	N/A	N/A
Limnos	0,10%	0,04%	0,01%	N/A
Thessaloniki	0,01%	0,02%	0,01%	0.024%
Zakynthos	NO BIRD STRIKES REPORTS	0,02%	0,01%	N/A
Kos	0,03%	0,02%	N/A	N/A
Hios	0,01%	0,01%	N/A	N/A
Iraklion	NO BIRD STRIKES REPORTS	0,01%	0,00%	N/A
Mikonos	NO BIRD STRIKES REPORTS	0,01%	N/A	N/A
Rhodos	0,01%	0,01%	0,00%	N/A
Samos	0,10%	0,01%	N/A	N/A
Mitilini	0,04%	0,01%	0,05%	N/A
Chania	NO BIRD STRIKES REPORTS	0,00%	0,01%	N/A
Athens/Athens International after 28.03.01	0,04%	0,00%	0,00%	0.0028%

Table 2.

Regarding the relative high number of bird strikes per ten thousand flights for the years 1999-2000, it must be taken into account that this number, for some airports, is elaborated from low traffic data, because some holiday destinations have low traffic and during the summer. Such airports are Araxos, which for the year 2000 had 805 flights and for the year 1999 had 612 flights, Kalamata which for the year 2000 had 964 flights and for the year 1999 had 1004 flights, Preveza which for the year 2000 had 2331 flights and for the year 1999 had 1837 flights and other.

The traffic to these airports is mainly charter operators from Europe. These operators represent 40% of the airlines reporting bird strikes in Hellas (see relevant figure 2)

That is why in some cases we cannot have valuable conclusions regarding the true and fair picture of the problem regarding the bird strikes.

It must also be underlined that the damages caused to the aircrafts because of bird strikes are minor at the airports with high number of strikes per ten thousand flights (Araxos, Kerkira, Kalamata) (Nikolaidis 2001, 2003)

3.3.Reporting Operators

In Greece there were more than 20 AOC (air operators certificate) holders in 2001. Olympic Airways was the only Greek operator, which reported bird strikes. There are no reports from other organisations or institutions (aero clubs, private owned aircraft, pilot training organisations, maintenance personnel, airports etc)

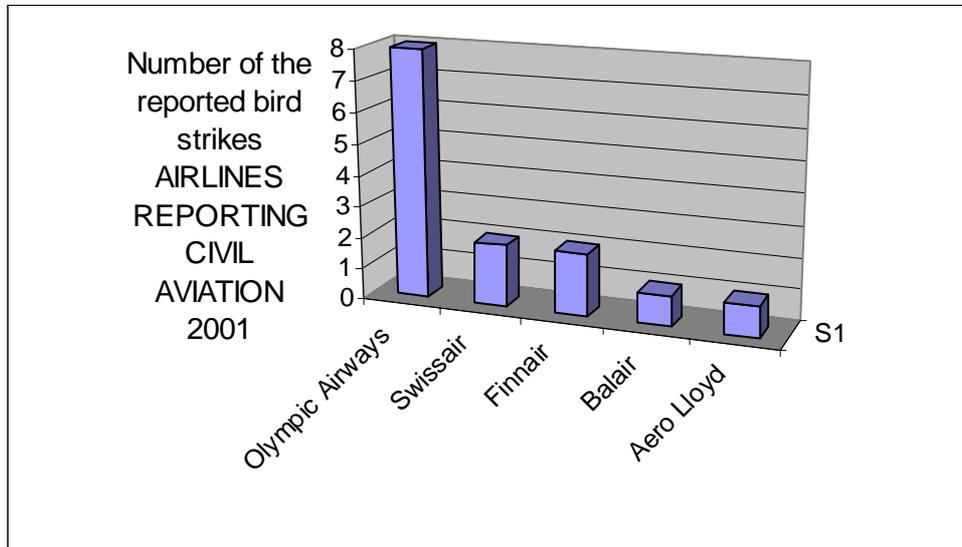


Figure 2

3.4.Top Manufacturers by aircraft model

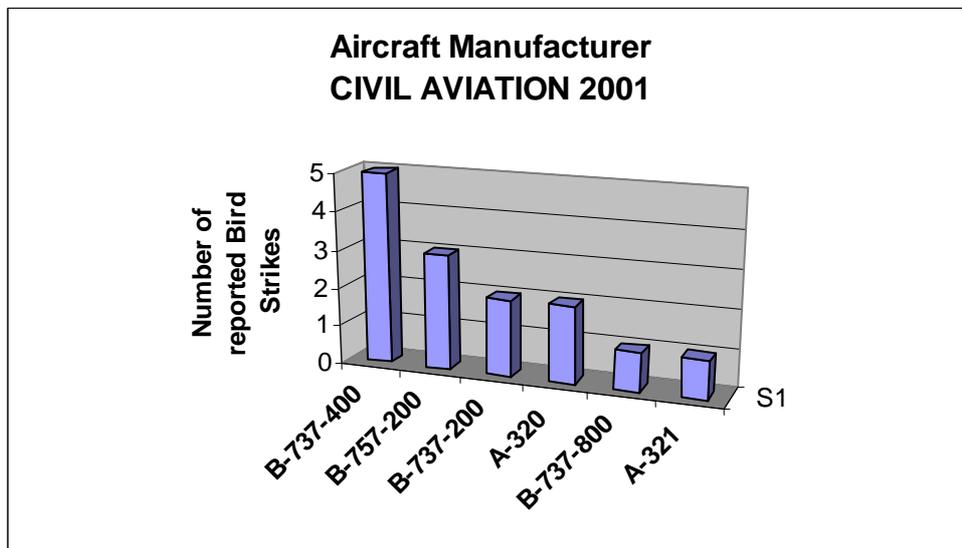


Figure 3

4. Future Directions

In the future we should (all the stakeholders evolved) contribute on the decision on the national strategy for the management of birds (wildlife). The strategy can only be decided and then implemented by the highest, possible, authority, which has to be the Ministers of Agriculture, of Transportation, of Defense.

It will be necessary to pursue co-operation between HAF, CAA, airports, universities, research institutes, airlines, the Hellenic Ornithological Society in order to implement a research programme on bird migration in Greece so that bird flights may be monitored by radar for about 5 years. This will help to put down the precise routes followed by birds when they fly over Greece as well as the altitude, the range and the frequency of migration in specific time periods. Moreover, this research shall offer the possibility for HAF and CAA to make predictions on the flights of birds and to actively participate in the warning system.

A research programme should also be implemented for the management of birds in airports in order to identify the intensity of the problem in each airport (collection of all registered bird strike cases, registering of aircraft types and frequency of movement etc.) and to offer management solutions with the help of experienced ornithologists, taking into account the bird species which cause the problem, their standard behaviour, the ecological conditions of each airport's site as well as the reasons for which birds are attracted to these airports.

The HCAA have to start an awareness program, on bird strikes. It is the only method of encouraging pilots to report bird strikes.

A Bird Identification Method is vital. Our colleagues in other countries have developed contemporary methods, which easily can be introduced in Hellas.

Finally, it is necessary to set up in Greece a national committee in which it will be necessary to have the participation of delegates from all parties dealing with this problem (HAF, CAA, airline operators, Hellenic Ornithological Society, academics, etc.).

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