

## WILD LIFE HAZARD POLICY

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### **Abstract**

Contracting states of the International Civil Aviation Organisation (ICAO) base their regulations of bird hazard reduction on standards and recommended practices for aerodromes according to Annex 14 Chapter 9 as adopted in 1990. Since 1990 environmental protection has increased, air transport has increased and science has progressed. Bird strikes are reducing flight safety and have a direct financial impact on the airlines. The International Federation of Air Line Pilots Associations (IFALPA) believes that the airline industry partners could be convinced on economical arguments to invest effort and finances to reduce wild life hazard. However, adopting rules and regulations is the most powerful and effective tool. Therefore in its 1999 conference IFALPA adopted an updated wild life strike hazard policy. The IFALPA policy determines responsibilities more clearly, defines an area, introduces an acceptable risk factor and specifies a number of actions. IFALPA considers national wild life strike committees with an ALPA representative as voting member essential. IFALPA believes that its policy should be adopted by ICAO, resulting in adopting national regulations accordingly. It is believed that through these national rules, bird strike risk will be reduced and therefore flight safety will be improved.

**Key Words:** Organisation, Plans, Risk assessment, Policy, Regulations, Standards.

It is an honour to be invited to speak to you at the INTERNATIONAL BIRD STRIKE COMMITTEE 2000 conference.

## 1. Introduction

It is the very members of the INTERNATIONAL BIRD STRIKE COMMITTEE who know best that wildlife is a hazard to flight safety. You are also the experts on measures to be taken. Therefore, I will not go into these. What I would like to point out is the pilots' point of view and what we think could be done to avoid more damage and loss of lives. My presentation will start with an introduction of IFALPA, via some relevant quotes I will touch where flight safety stands today, then go into convincing arguments and restrictions. Finally I will reveal the IFALPA strategy and explain the motives behind the new wild life hazard policy of IFALPA.

## 2. IFALPA

The International Federation of Airline Pilots Associations (IFALPA) is an organisation, which includes 95 Member Airline Pilots Associations (ALPA) and represents about 100,000 airline pilots. The Mission of IFALPA is to be the global voice of airline pilots, promoting the highest level of world-wide aviation safety and providing services, support and representation to all of its member pilots associations. IFALPA has a representative in the International Civil Aviation Organisation (ICAO), which enables them to put forward the points of views of pilots in (inter) national regulations. IFALPA has 11 committees as groups of specialists to formulate up-to-date IFALPA policies. One of these committees is the Airport and Ground Environment Committee, which formulates the IFALPA Annex 14. Bird hazard reduction is in this annex. In 1999, IFALPA adopted a new wild life hazard policy, which differs from the existing ICAO bird hazard reduction policy. IFALPA therefore strives to change the ICAO Annex 14 bird hazard reduction policy.

## 3. Quotes

I have taken up some quotes from daily life that clearly show the problem areas in wild life hazard control.

- **Aerodrome control Tower.** "Cleared take-off, mind the birds on the runway", this resulted in a B747-300 with one engine out and one engine

stalled at 40%, an n-2 landing was uneventful and there were no casualties.

What this example shows is that the awareness of the tower controller (ATC Air Traffic Control) as well as the awareness of the pilot of bird hazard could use some improvement.

- **Airport employee:** “We know that one single gadget against wildlife strikes does not exist. Every situation requires its own specific measures. But management will not give us the money to set up a wild life hazard organisation to do the job. However, a permanent Notice to Airman (NOTAM) is put forward.”

Obviously, the problem is known and airport management did not think it necessary to allocate financial resources. Therefore airport management in this case accepts the risks involved. But do they really? Or is it their intention, by putting out a permanent NOTAM, to say that the pilot has been warned in case of an accident?. The “cover your ass” principle apparently prevails. A NOTAM should inform pilots on an up-to-date and daily basis and should be realistic. More important however is that actions are taken to solve the problem. So, information yes, but what are you doing about it?

- **Wild life specialist:** “The increase of environmental protection leads to an increasing quantity of wild-life. Air transport also increases, therefore the number of accidents will increase.”

The wild life specialist nicely analyses the growth in accident rate due to wild life strikes in the future. Whether this is acceptable is another question.

- **USALPA pilot:** “The position of issues such as windshear and icing twenty years ago is the same as the wild life issue now. The question is do we have to wait (again) for major crashes before measures will be taken?” Only after some major accidents, with the loss of hundreds of lives and after thorough investigations, were measures taken to counter windshear and icing problems about two decades ago. Although there have been numerous bird strikes, no accident has been horrible enough to inspire the media to report extensively on this problem. And, as proven before, politicians will react to media attention. Ironically, we have the misfortune that we are lucky. A B 747-400 with 500 people on board has not crashed into a suburb as a result of multiple bird hits yet. Murphy says that this will happen. The question is do we wait for it, or could this be avoided by doing the job right now?

- **IRISH ALPA:** “Initially the Dublin court did not find any legal grounds to prevent the construction of a new waste disposal site near the airport. It appeared that the national law was not coherent with ICAO. A contributing factor was that bird hazard reduction is not a standard but just a recommendation in ICAO annex 14.”

This shows the limitations of ICAO annexes. If they are not translated into national laws, they have no jurisdiction. As opposed to the “Standard”, the “ICAO recommendation” has even less jurisdictional power.

#### 4. Where does safety stand?

**Seesaw.** Since the beginning of commercial air travel there has always been a contradiction between profit and safety. However, in its 80 years existence, the airline industry in general has managed to find an acceptable balance between these two opposites. Mainly because the industry has learned a lot from accidents and consequently authorities demanded actions to be taken after accidents. But also the continuous effort of pilots to strive for safer flights has contributed. This ever-lasting struggle between the airlines, the authorities, the pilots and other organisations has paid its dividend. The seesaw of finances and safety is in general balanced.

**Rob’s plate.** However, since a decade others have now joined these two opposites. Nowadays the environment plays an important role and recently capacity has become a major player as well. So at this moment the opposites, finances, capacity and environment all three are threatening the fourth factor, safety. All of these four also influence each other. This is a new ball game. The airline industry has to find a way to balance these four. I compare that with a plate with a marble on it, Rob’s plate. At the edge of Rob’s plate are finance, capacity, environment and safety. In the middle there is a marble. The art of keeping the marble in the middle is the aim of the game. What one sees at the moment is that when e.g. environmental issues get priority, capacity tends to be reduced. This is not in the interest of an airport or of the airlines, so they strive for keeping capacity. By keeping the profits as they are, the plate will be banked towards safety and therefore safety will degrade. The airline industry has not found the right balance yet. The situation is unstable and safety is paying the price.

#### **Convincing arguments.**

The question is how do we convince the aviation sector (airport, airline, manufacturers) and international, national as well as local authorities, that they should keep the marble nicely balanced in the middle by **investing** reasonable effort and cash in the reduction of the effect of wildlife strikes? In our opinion there are three convincing arguments.

**Economic.** First there is the economic argument. Wild life causes damage to aircraft. Direct costs, such as repair and replacement costs are easy to quantify. But indirect costs, such as delays, rebooking of passengers, non-

productivity of a crippled aeroplane, the loss of passengers, the increase of insurance premiums etc., are much more difficult to quantify. Obviously the airlines (IATA) are the beneficiaries by reducing these costs. Ironically IATA shows very little interest and virtually no initiative in limiting or reducing these costs. Therefore economic arguments could induce the airlines and airports to invest.

**Awareness.** Another argument is the general awareness of the danger of wild life strikes. Not only pilots, air traffic controllers, airport managers and aviation authorities should improve this, but also the public in general should be made aware of the risks involved. They vote. They control the politicians, who are in the position to change the regulations. Which would be more acceptable to the public, more birds or a safer surrounding? Where is the marble located?

**Rules & regulations.** Finally it should be very clear that the best convincing argument is the law. As proven before, only after an accident did the necessary adjustments to procedures or investments take place, when they were made mandatory by the authorities. Therefore the authorities should be persuaded to do the job. One way to do this is by changing ICAO annex 14 and by getting wild life hazard control into national rules and regulations.

## 5. Restrictions

We are facing a number of restrictions which all lead to an increasing risk of wild life strikes.

**Economic.** First there is the economic pressure. The airlines hate delays and the pressure on pilots and air traffic control to minimise delays is huge. The first quote is a good example of this. Apparently some colleagues will accept a birdstrike risk just to avoid delay. Not so long ago, I requested a birdscare at Hamburg airport because a lot of birds were crossing the runway. The tower controller said: "Yes sir, we know there are a lot of birds, it is in the NOTAMS and for a bird scare we have to get somebody, that could take twenty minutes, are you sure you don't want take-off now?" "No", I said and taxied clear of the runway. A colleague of the Deutsche BA did not want the delay and accepted take-off. He took off; luckily enough did not hit any birds and cleared the runway for me. (Thank you, dear colleague!).

Another economic restriction is the increasing claim for real estate that surrounds airports. Dublin airport is a good example of this, but also here in the Netherlands we had a problem with Eindhoven airport.

**Risk assesment.** A third economic restriction is the reluctance to invest adequate cash in a wildlife hazard organisation. Such an organisation could however be seen as an insurance premium. This reluctance would be

understandable if it were based on solid calculations. This would answer the question whether the risk would be worth the premium.

There is one uncertainty however. As an example I would like to take you back to the beginning of December 1999. The Dutch cabinet would discuss the future of Schiphol on 17 December. Schiphol has a very decent statistical safety record, but had a severe crash of a B747 in a suburb of Amsterdam, called the Bijlmer. This accident caused enormous media attention, followed by a parliamentary hearing of all those involved. Suppose that in the first week of December an MD11 would take off from runway 09 and would encounter multiple birdhits, severely damaging two engines and would crash in "Bijlmer". How long do you think the political discussion about the future would last? One second? two?

What I would like to point out is that objective risks and objective statistical data are not always in line with public opinion and political reality. Therefore the analysis of risk versus premium should be reviewed regularly. It depends on local circumstances and it changes in time.

**Environment.** Another restriction is environmental issues. Nowadays wildlife protection organisations are realising growth in populations, also in the neighbourhood of airports. I will not judge this, but a result is a proportional increase in the bird strike risk. Is the general public aware of this consequence and what this could mean for the safety of their living and / or work environment?

**Awareness.** This brings me to the third restriction: awareness. Thanks to the great effort of the members of this conference, the awareness regarding the wild life strike hazard has increased. But have we reached our goals yet? I think, although we are flying on the right track now, we are actually just in the departure lounge and still have a long way to go. The awareness among pilots, air traffic controllers and airport managers needs to be improved. But more important, the responsible authorities should be more involved in reducing bird hazard. At this moment there are few legal instruments to counter wild life strike risks. ICAO annex 14 only recommends some actions.

Another problem is that a lot of people seem to think that because it concerns wildlife, you cannot do a lot about it. Well, in the beginning of commercial air travel they thought the same about the weather. But now we have a world-wide professional meteo service. Before every flight, the pilot studies extensively all weather factors and adopts the flightplan accordingly. During the flight the pilots uses his weather radar to alter its track when necessary. Therefore it is possible to avoid natural dangers, given the right information and the right tools.

**Operations.** Finally the last restriction: operations. The information to the pilot about bird migration or bird hazard is often limited to just a (permanent “cover your ass type”) NOTAM or what he sees directly in front of him with his eyes. Especially close to the ground the manoeuvrability is very limited, therefore the later the warning, the less he can do. We have no instruments on board to detect bird-mass, nor do we have an actual and forecast bird migration report relevant to our flightpath. Therefore pilots are at this moment extremely limited in what they can do to avoid wild-life strikes.

## 6. IFALPA strategy

With all these factors in mind IFALPA has developed its new wild life hazard policy. We'd rather speak of wild life than birds, because the term wildlife comprises everything. Now we seek as much support as possible in order to get this policy adopted by ICAO and the national authorities. We strongly believe in the establishment of national bird strike committees (as already established in some countries) and we think a pilot should be a voting member in such a committee. Furthermore an awareness campaign should be launched. Finally IFALPA could use its star system to those airspaces or airports not compliant.

## 7. IFALPA policy

The two key elements in the new Annex 14, chapter 9.5 are a reduction of probability by reducing the kilogram birds per year per Km<sup>3</sup> around the flightpath and the introduction of the non-acceptable risk factor, which will reduce the effect (=probability x risk) of a bird hit to an acceptable level.

This is achieved by adopting the following policy:

## 8. Annex 14 paragraph 9.5.1

9.5.1. Standard<sup>1</sup>.- The bird strike hazard on, or in the vicinity of, an aerodrome should be assessed through:

- a) the establishment of a national procedure for recording and reporting bird strikes to aircraft; and
- b) the collection of information from aircraft operators, airport personnel, etc. on the presence of birds on or around the airport.

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<sup>1</sup> Like all bird hazard paragraphs, it should be upgraded to standard to gain more jurisdictional force.

Note. - The ICAO Bird strike Information (IBIS) is designed to collect and disseminate information on bird strikes to aircraft. Information on the system is included in the Manual on the ICAO Bird Strike Information system (IBIS).

## 9. Annex 14 paragraph 9.5.2

9.5.2. Standard.- The appropriate authority<sup>2</sup> should take action to decrease the number of birds constituting a potential hazard to aircraft operation by adopting measures which will result in eliminating the chances of a bird-strike leading to severely damaging the aircraft or endangering human lives<sup>3</sup> on the airport during takeoff or landing run, or in the approach or departure path within 3 kilometres (10.000 feet) of the runway.<sup>4</sup>

Note.- Guidance on effective measures for establishing whether or not birds, on or near an aerodrome, constitute a potential hazard to aircraft operations, and on methods for discouraging their presence, is given in the Airport services Manual, Part 3.

### Annex 14 para 9.5.2

- a) Identification of the bird (wildlife) species on, and in the vicinity of, the aerodrome<sup>5</sup>
- b) Assessment of the aerodrome wildlife strike risk<sup>6</sup>
- c) Organisation of the aerodrome staff and equipment for effective wildlife control
- d) Address any habitat problems on the aerodrome or in its vicinity
- e) Utilisation of effective dispersal measures where necessary
- f) A reporting and feedback system for the collection of wildlife strike data.

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<sup>2</sup> Should be nationally legislated. It should be perfectly clear who is responsible for the risk of wild life strikes in the mentioned airspace. This could be the national authority, a local authority or it could be delegated to the airport authority.

<sup>3</sup> Introduction of what is not acceptable

<sup>4</sup> Defines area, this could include an area outside the airport. This area is the airspace of the most critical flightportion. That is when an aircraft is close to the ground, with lots of drag low on speed and high on power.

<sup>5</sup> Identification is needed for assessment of potential risk. This could be done by independent experts (INTERNATIONAL BIRD STRIKE COMMITTEE?) or e.g. a national bird strike committee

<sup>6</sup> If it is concluded that this could lead to loss of human lives or severely damaging the aircraft within the mentioned area, then a wild life control organisation should be established and given the tools to reduce the risk to an acceptable level.



Annex 14 para 9.5.3

9.5.3. Standard. - Garbage disposal dumps or any such other source attracting bird activity on, or in the vicinity of, an aerodrome should be eliminated or their establishment prevented, unless an appropriate study indicates that they are unlikely to create conditions to a bird hazard problem.

Note: A potential safety hazard exists when a waste disposal site is located within 3 kilometres (10.000 feet) of a runway used by turbo-engined aircraft. When a waste disposal site is located within 8 kilometres (5 miles) radius of a runway and falls under the approach or departure path or has the potential to increase birds in the active airspace such a site shall be considered incompatible with aircraft operations.

## 10. Conclusion

Bird strikes have a direct financial impact on the airlines and reduce flight safety of the passengers. The danger of bird strikes increases because environmental protection increases and air transport increases. However, science progresses and therefore the effects could be reduced. This requires structure and funding. The establishment of a national wild life strike committee with an ALPA representative as voting member gives that structure. We believe that funding could be realised by convincing the airline industry partners as well as the authorities with economical arguments. An investment in effort and finances to reduce wild life hazard will eventually its dividend. However, adopting rules and regulations is the most powerful and effective tool. Therefore IFALPA has developed a wild life hazard policy, which determines clearly responsibilities, defines an area, introduces an acceptable risk factor and specifies a number of actions. ICAO should be convinced by as many parties as possible and with strong arguments to change its annex 14 accordingly. National authorities should adopt their national regulations in line with ICAO. IFALPA believes that through these national rules, the bird strike risk will be reduced and therefore flight safety will be improved.

**Recommended actions** for the honourable members of the ISBC 2000 conference.

- Contact your national aviation authority and establish an national bird / wild-life strike hazard committee (if not already done so).
- Contact the Airline Pilots Association in your country and invite them for the BSC.
- Persuade your national aviation authority to adopt the rules in line with IFALPA annex 14
- Write supportive letters to ICAO concerning this policy.

- Establish as ISBC an entrance to ICAO.
- Convince the aviation sector with economic arguments that an investment in measures to reduce the wild life strike risk, pays off.

What we ask from the honourable members of this conference is that you take any reasonable effort to get this done.

You are the experts.

#### Captain Rob van Eekeren

The author graduated in aviation science at the Royal Military Academy, became a fighterpilot, flight-commander and staff-officer in the Royal Netherlands Airforce. He was duty commander of Schiphol Airport for a period of two years. Joined KLM Royal Dutch Airlines, as a co-pilot on the B 747-400 and is presently Captain on B737 -300,-400 & -800. He is chairman of the technical committee of the Dutch Airline Pilots Association (VNV), is a member of the Dutch Bird Strike Committee and is a member of the IFALPA airport ground environment committee.

**Handout by presentation: WILD LIFE HAZARD REDUCTION  
International Association of Air Line Pilots Associations (IFALPA)  
IFALPA annex 14 policy**

**9.5 Bird hazard reduction**

**9.5.1. ~~Recommendation. Standard.~~** - *The bird strike hazard on, or in the vicinity of, an aerodrome should be assessed through:*

- a) the establishment of a national procedure for recording and reporting bird strikes to aircraft; and
- b) *the collection of information from aircraft operators, airport personnel, etc. on the presence of birds on or around the airport.*

Note.- The ICAO Bird strike Information (IBIS) is designed to collect and disseminate information on bird strikes to aircraft. Information on the system is included in the Manual on the ICAO Bird Strike Information system (IBIS).

~~**9.5.2. Recommendation.**~~ - *When a bird strike hazard is identified at an aerodrome, the appropriate authority should take action to decrease the number of birds constituting a potential hazard to aircraft operations by adopting measures for discouraging their presence on, or in the vicinity of, an aerodrome.*

**9.5.2. Standard.**- The appropriate authority should take action to decrease the number of birds constituting a potential hazard to aircraft operation by adopting measures which will result in eliminating the chances of a bird-strike leading to severely damaging the aircraft or endangering human lives on the airport during takeoff or landing run, or in the approach or departure path within 3 kilometres (10.000 feet) of the runway.

This action should include

- a) Identification of the bird species on, and in the vicinity of, the aerodrome
- b) Assessment of the aerodrome birdstrike risk
- c) Organisation of the aerodrome staff and equipment for effective bird control
- d) Address any habitat problems on the aerodrome or in its vicinity
- e) Utilisation of effective dispersal measures where necessary
- f) A reporting and feed-back system for the collection of bird strike data.

Note.- *Guidance on effective measures for establishing whether or not birds, on or near an aerodrome, constitute a potential hazard to aircraft operations, and on methods for discouraging their presence, is given in the Airport services Manual, Part 3.*

**9.5.3 Recommendation. Standard.** - *Garbage disposal dumps or any such other source attracting bird activity on, or in the vicinity of, an aerodrome should be eliminated or their establishment prevented, unless an appropriate study indicates that they are unlikely to create conditions to a bird hazard problem.*

Note: A potential safety hazard exists when a waste disposal site is located within 3 kilometres (10.000 feet) of a runway used by turbo-engined aircraft. When a waste disposal site is located within 8 kilometres (5 miles) radius of a runway and falls under the approach or departure path or has the potential to increase birds in the active airspace such a site shall be considered incompatible with aircraft operations

Remark: *Text in italics is original text, Text in standard is new proposed text,  
~~Strike through text~~ is to be replaced*