

ARE WE WINNING THE BATTLE?

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Abstract

Entering the New Millennium air travel is rapidly expanding and it is perhaps timely to review progress being made in reducing the hazards caused by the conflict between birds and aircraft. The Paper reviews the major areas of Working Group activity and highlights those where progress is inhibited. A number of suggestions are made in order to improve future advancement and reduce risks.

Key Words: Attractants, Avoidance, Bird populations, Control methods, Detection, Engineering, Hazard management, Identification, Legal issues, Public relations, Statistics.

1. Introduction

After 28 years of involvement with this Committee and currently as the Honorary Chairman, it is perhaps timely to review progress and ask ourselves 'are we winning?' IBSC is a forum where all can share problems, ideas and hopefully, solutions. The way the Committee works is constantly evolving with new working groups being formed whilst others such as the Communications WG and the Flight Procedures WG have long since disappeared. Methods of communication are also altering very rapidly and IBSC has to be part of this change. Perhaps the best way is to very briefly review progress in each of the current working group areas.

2. Aerodrome

The working group has been presented with many papers on all aspects of aerodrome problems ranging from preventative measures to specific problems at individual airports. As a result, this and other material were summarised into a publication 'Some Measures Used in Different Countries for the Reduction of Bird Strike Risk around Airports', better known as the 'Green Booklet'. This used to be regularly revised and a new edition produced every few years. Most IBSC participants were able to contribute to the content. IBSC also used to assist ICAO with 'Bird Control on Aerodromes'. It is now over 10 years since the last Green Booklet (Fourth Edition May 1990, Helsinki) was published. This is not due to a lack of will but the result of the increase in the normal day to day workload on the individuals concerned, IBSC work is mostly an 'extra' task.

Most of us here know what is necessary on and around airports ranging from removal of garbage to the use of long grass and of distress calls and shell crackers. Are these techniques being thoroughly applied at all the aerodromes in all of our own countries? Are they being applied in the rest of the world? I think we are all aware that the answer is **NO**. So what can we do about it? Does the solution lie in education or legislation or a combination of both? It was suggested in Slovakia that we need International Standards, as we have for Fire and Rescue which is universally well resourced and staffed, because it is an ICAO Standard, yet most airports have more bird strikes than fires. A few countries, notably France, have produced a risk assessment of all their airports and depending upon the airport traffic and bird strike risk, specified the measures, staff and equipment. An excellent scheme except that with the best will in the world it went wrong at Paris Le Bourget mainly due to staff sickness. Some countries have delegated responsibility for bird strike matters to the Airports ie. self regulation, which is a bit like leaving Dracula in charge of a blood bank!

The proposals at this meeting to set up two new Working Groups to focus on Bird Behaviour and Airport Vicinity, are an excellent move. We know little about why it is some birds successfully avoid an aircraft whilst others don't, nor do we know how much use they make of the ultra violet end of the spectrum or of ultra-sound.

Proposals:

- Redouble our efforts to be sure that in our own countries the airports are thoroughly applying the measures that we have been aware of for many years, with a formal inspection system to ensure that the airports are meeting their Duty of Care.
- Abandon the Green Booklet and replace it with a 'Green Section' on the IBSC Internet site where readers can find the Abstracts of all recent and key papers from the past. These could be accessed via the IBSC Keyword system. This will minimise work in producing a new the booklet and remove the printing and distribution cost.
- Each country should contact their ICAO Representatives to start the process to get aerodrome bird control accepted as an ICAO Standard alongside Fire and Rescue, Runway Lighting etc rather than a recommended practice in Part 3 of the Airport Services Manual.

3. Public Relations and Legislation

Only a few of the countries who regularly attend IBSC have an awareness programme, yet we all know that many parts of the aviation community are unaware that birds are a hazard. There seems to be a growing trend for Senior Managers to be financiers who are more interested in balancing their budgets rather than technical people taking appropriate, perhaps expensive or 'politically unacceptable' steps, to deal with the problem. On the aerodrome, pilots, engineers and airport staff need to be kept or made aware that birds are a problem, in some areas of aviation there is a high turnover of staff and a constant stream of new people. How many countries represented here have the following:

- appropriate awareness at all levels of aviation including a National Bird Committee to bring all parties together on a regular basis.
- practical training courses
- possibly, a video of benefit to all sections of aviation, and a means of making it readily available and for bringing it to people's attention
- posters to remind pilots, engineers and airport personnel of the need to report all bird strikes and if uncertain of the bird species, to get any remains identified
- an Internet web site for Reporting and for disseminating information

- regular and available analyses and trends so that those who do report can feel that their contribution is part of the general picture.

I believe there are only a very few countries at this Meeting which have most of the above items, often as a result of one persons initiative rather than a policy matter. Unbelievably, in the UK there is no longer a bird committee, even the annual meetings were abandoned some years ago.

Proposal:

- That the above list be embodied into each countries code of practice and eventually becomes part of ICAO Bird Control and Reduction.
- Steps be taken to make the existence of the IBSC Internet web site better known.

4. Identification

Thanks to the work of Israel, the Netherlands, UK and USA, the means are available for much better identification than just the pilot's fleeting glimpse. It seems only a few countries are using anything more than basic identification because of either the time or cost of getting it done properly. Do we believe that more than a small percentage of strikes are being correctly identified? How can we be sure that we are dealing with the problem correctly if we are not positive about the species of birds involved? The work has moved forward thanks to the information on the Netherlands/Israeli CD ROM, which is only available to a those few who have purchased it and who have the relevant equipment in their work place. Airside staff may be more likely to have suitable equipment available at home than in their workplace.

Proposal:

That sponsorship be obtained to fund the Identification CD ROM Information on the IBSC Web Site so that it is available to all who wish to benefit, you cannot sell safety.

5. Impact Engineering (was Airframe and Engine)

In the past the major activity in this group was the production of a Design Manual to minimise the effect of bird impact on aircraft structures. This group's major interest is now in computer aided enhancement of military aircraft canopies and windshields as well as improved engine capability. The moves to require new civil engines to be able to withstand an 8 lb bird and multiple mixed 1 1/2 to 2 1/2 lb birds will do much to improve future capability. The work on the body density of birds and on flock density will also enhance understanding of what engine designers are really up against. The work in this

area is progressing very favourably in the hands of the Joint European Authorities, the FAA, engine manufacturers on both sides of the Atlantic and United States Air Force researchers. The lack of fatal airline accidents in recent years is almost certainly due to the multiple 1 1/2 lb engine ingestion requirement for civil aircraft implemented in the early 1970's. Certain uses for strike data are inhibited by lack of information on bird species in particular on large birds.

Work is progressing on the agreement of an artificial bird for impact testing to remove the health and safety risks inherent in rotting chicken flesh.

6. Remote Sensing and Low Level (was Radar and Military Low Flying)

These activities has in recent years been combined mainly because of the considerable success in the tracking of regular bird movements by radar and other means. This has resulted in appropriate warnings, the revision of training routes and even restrictions on low level flying when birds are migrating. The cost effective success of this work has been notable particularly in Israel.

Considerable work is taking place in several parts of the world on Bird Avoidance Models.

The problem of awareness of aerodrome local bird movements and the ability to detect them in poor visibility and at night still remains and the Working Group some years ago produced a specification for an Aerodrome Bird Detection Radar. No manufacturer has so far produced equipment to meet this specification and no airport has such a difficult bird strike problem that they have said 'we need it', and would be prepared to commit the staff resources to operate it. I remember 20 years ago attending a trial with a standard marine radar that could clearly show chicken carcasses placed on the grass, and hares running around the aerodrome at night!

Proposal:

Steps should be taken to ensure that the effectiveness of low flying avoidance measures are brought to the attention at regular intervals of the High Command of all Air Forces, particularly those where changes of personnel are frequent.

7. Statistics (was Analysis)

Throughout the 1980's at each Meeting the Chairman of the Statistics Working Group produced a consolidated analysis of the data supplied by each

country covering European Airlines bird strikes world wide. This included via aircraft and airport movement data, strike and damage rates for aircraft types and airports as well as the annual strike rate, something which ICAO is unable to provide. This was a useful guide to where there were particular areas of risk and importantly whether the overall situation was improving. These annual analyses were combined to produce 5 year analyses based on over 7,000 strikes. The last one available covered the years 1981 to 1985, a long time ago. Has there been an increase in the bird strike rate because of the new generation of much quieter engines? Have the changing bird populations caused an increase in strikes? The system then lapsed because a number of countries were unable to devote the time to the task whilst others were unwilling to provide some of the movement information for commercial reasons in case theirs compared unfavourably with other airlines or countries. Only a few European countries publish an Annual Analysis whilst others are not even sending the data to ICAO for inclusion in the International Birdstrike Information System (IBIS). Furthermore, In order to save money Authorities in some countries, including the UK, are using external contractors to handle the bird strike data rather than using their own staff who generally have an aviation background or training.

Furthermore, in the past at each meeting the then Statistics Working Group Chairman produced a Working Paper containing details of the Serious Bird Strikes, anywhere in the world using information from members, ICAO, aviation publications, Lloyds of London and other Insurers. This was helpful in bringing to everyone's attention the continuing risks inherent in the most serious events. When the then WG Chairman became IBSC Chairman, because of workload, the task did not continue. The last Serious Report covered the years 1992 to 1993, so we are no longer even aware of the details of the most hazardous events.

Thus, we do not appear to have the information to tell us if in civil aviation the bird strike rate is better or worse than it was, we don't know if we are winning the battle or not.

On the Military side, things are rather better in that the Royal Netherlands Air Force data base, EURBASE, through its NATO network is working well and the information is secure and available to military interests.

Proposals:

- That steps be taken to resume the European Civil Aircraft Bird Strike Analysis to cover the 5 year periods 1986 to 1990, 1991 to 1995 and ultimately 1996 to 2000. Each country would have to be able to be in a position to supply their own 5 year analysis. We will then be better aware of the long term trend in a number of key areas in particular Annual rate, bird species, airport rates etc. The co-operation of all European countries

will be necessary and perhaps a research student or contractor could be used to consolidate all the information.

- That all members E-mail the IBSC Chairman with details of any serious events to Civilaircraft so that they can be included in a special section on the IBSC Web Site. These could be collected together to form a Working Paper at each IBSC Meeting.
- All countries must ensure that their strike data is sent to ICAO for inclusion in the IBIS global strike data system.

8. Conclusions

The work pressure on individuals has increased during the last 20 years as aviation has expanded whilst at the same time there has been a general reduction in staff who are expected to do more and more tasks. This means that in a number of areas, we are **NOT** winning the battle to reduce the risk from bird strikes. Following an accident, if those responsible in each country have in the past not taken appropriate measures, the lawyers will probably find out.