

**A JURIDICAL APPROACH TO THE PROBLEM
OF BIRD STRIKE PREVENTION**

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Abstract

Italy has so far approached the issue of bird strike prevention by attending mainly to the legal aspects involved.

Since the Italian legal system is based on a strict hierarchy of the sources of law, together with traditional tools for 'on the field' measures, the BSCI felt it useful to begin by studying the problem and drawing up precise legal norms to be submitted to political and administrative authorities.

The BSCI therefore put some pressure on the Italian Civil Aviation Authority, the Ministry of Transport and some MPs, co-operating with them to promote discussion and have appropriate new legislation on the bird strike issue produced.

The current situation concerning these regulations is as follows:

- a) Circular 13755 AC of 16.10.1998, in which the airport operator is clearly identified as the subject responsible for bird hazard prevention and for bird dispersal by suitable means.
- b) The ENAC Directive of 20.5.1999, by which the Italian Civil Aviation Authority establishes in detail the procedures and measures to be adopted for strike risk prevention at airports and for bird dispersal by bloodless means.
- c) Parliamentary Bill No. 4212, presented to the Chamber on 7.10.1997 by 14 MPs, which deals in particular with private property bordering on airports, forbidding or controlling human activities which might attract birds.

- d) Proposal to modify the Navigation Code of 1942. The Government delegated a Special Commission of Italian aeronautical law specialists to work on this text, and it was presented in October 1999. Apart from containing some aspects of c) above, the proposal also uses regulations concerning obstacles (see ICAO Annex 14) with the aim of defining air spaces that need protection in terms of activities that might be dangerous in attracting birds.

Although only a) and b) above are currently being enforced, these alone are successful in controlling the bird strike issue at Italian civil airports.

The final approval of Parliamentary bills will extend protection to areas outside airports, which up till now have been out of control almost all over the world. They allow the State to forbid or limit agricultural, industrial or commercial activities that could be a source of danger to civil aviation by possibly attracting birds.

In spite of the difficulty of explaining typically Italian legal concepts in a foreign language, the presentation will illustrate in detail the salient points of existing regulations and bills and will analyse the benefits to be achieved in terms of safety.

Key Words: Land Use, Liability, Regulations, Legislation.

In 1987, when the Bird Strike Committee Italy was first set up, the problem of controlling wildlife around airports had hardly been taken into consideration and was not properly understood.

Italian airports did not belong to a single category; some airports were entirely under private management (though these companies were financed mainly or totally by public capital); others were owned and run by the Government, and still more had some services provided by a private company, while the Government was responsible for the building and maintenance of the main airport infrastructures. Furthermore, there were military airports open to civil air traffic.

Within this extremely varied context, where almost every airport was in a different situation from the others, the bird strike hazard was largely underestimated. Neither the public authorities nor the private companies were sufficiently aware of the problem, and certainly no specific programmes for control and prevention were being carried out.

Each airport did what it liked, and for most operators the only means of control consisted of bird dispersal, as and when necessary, by empirical methods.

The aim of this presentation is to illustrate what the BSCI has achieved so far, and to highlight their decision to give preference to legal aspects and norms as a way of generally increasing awareness of control and prevention of the bird strike hazard. The existing Italian regulations will then be presented and discussed in detail, as well as those bills under examination for approval.

From a legal point of view, initially the only 'rule' that existed on this matter was to be found in the ICAO regulations, in particular Annex 14 and DOC 9137/AN898. However, then, as now, it was not clear whether ICAO Annexes could be part of the national *corpus* of rules or not; they were considered more as technical proposals. The DOC papers became known more as scientific publications than legal provisions. In fact, the issue most under discussion, as it still is today, was how to introduce ICAO regulations into national legislation, bearing in mind that unless they receive a formal act of incorporation, these regulations cannot have any legal value at all.

No ruling existed in national legislation (except for a few brief informative leaflets issued by the Civil Aviation General Directorate) that envisaged impact with birds as a dangerous event in terms of aircraft safety.

On 11th February 1992 Law 157 regarding the protection of wildlife was issued by Parliament. This law was highly desirable as far as Italian environmentalists were concerned as it limited the uncontrolled fishing and hunting that were causing irreparable damage to the country's heritage. Surprisingly, one sentence of this vast and complex law dealt with aviation: Art. 2, point 3 states: "*The control of the degree of bird population around airports with respect to aircraft safety is entrusted to the Ministry of Transport*". Recognition had therefore been given for the first time and in a Law (that is, the highest degree of formal regulation) that a) birds around airports were a source of danger to air safety; b) their presence needed to be controlled; c) the Government, and in particular, the Ministry of Transport, was responsible for such control.

It is still not clear where this text came from, or the decision to incorporate it in a measure which had a completely different nature and purpose, though it is of course an Italian tradition to attach last-minute amendments concerning specific urgent issues to laws with a wider range of application.

What is certain is that the text was not drafted in Civil Aviation circles; maybe we are in debt to the environmentalists for initiating bird strike legislation!

The road was therefore clear for so-called secondary regulation, that is, for regulation to be set down for the general principles established by the Law to become operative.

With the announcement of Law 157, however, the heads of the BSCI were convinced of the need to speed up the action of increasing awareness in Civil Aviation executives, both as regulating authorities and as carriers and operators: a series of informative seminars was therefore begun, the first of

which was held in 1993, and scientific documentation drawn up and distributed to airports.

This material was basically of a practical nature, aimed at providing airport managers with useful advice on systems for bird dispersal and harassment. The legal aspects of the problem were not neglected; there was an attempt to outline the concept of responsibility in cases of bird strike and to face for the first time the matter of external areas bordering on airports, where it was considered that activities capable of attracting birds had a high incidence (it was actually estimated that more than a third of impacts with birds originated outside airports).

BSCI action was not only of a theoretical nature; alongside the study of legal aspects, groundwork was done for on the field experiments with dispersal systems, usually based on sonic and ultrasonic means (Genoa, Venice), while other airports successfully used falcons as a principal means of controlling the territory (Trieste).

BSCI activity, however, was also a result of its presence in international circles, in particular at conferences, where its representatives were able to gain valuable experience by exchanging information with participants from a variety of contexts.

One of BSCI's main actions was to begin to fill the gap in secondary regulations which had suddenly been opened by Law 157. It consequently suggested to the Italian Civil Aviation Authorities that urgent measures be taken to sensitize all airport directors about bird strike hazard and to point out the possible legal consequences of an air accident caused by impact with birds.

A directive was therefore issued in 1994 as a Decree of the Civil Aviation General Directorate.

Firstly, the directive stated that all airport directors should draw up local regulations embodying the actual terms of the directive. Briefly, standard procedures were established for bird sighting, for the inspection of the area for manoeuvring, bird dispersal and control of airport clearance.

In difficult cases, where the presence of birds was so frequent as to compromise safety, flight operations were to be suspended until normal safety conditions were resumed.

The BSCI realised, however, that in a country like Italy, where legend has it that 150,000 laws are simultaneously being enforced, such a delicate question as wildlife management could not be resolved without adequate legislation: a) to identify and prohibit human activities capable of attracting birds in and around airport territory; b) to propose that airport managers purchase, or rather oblige them to purchase, suitable control and dispersal devices. Detailed regulations regarding internal airport areas had already been adopted by aviation authorities in various countries; most of these can be

found in the IBSC "Green Booklet". The competent authority in Italy for issuing such regulations was the Civil Aviation General Directorate at the Ministry of Transport. The measure was to be enacted as a Minister Decree and was relatively simple from the point of view of procedure and approval; however up until 1999 these procedures had not even been scheduled.

By strange coincidence the content of the first text to appear on the subject of bird strike was complex and controversial. It concerned the question of limiting private property in areas bordering on airports, since human activities there might attract birds.

It seems a ruling of this kind had not been adopted anywhere in the world, even though the existence of dumping grounds, foodstuffs factories and livestock farming were in fact considered potential risks for flight safety; as it was impossible to prohibit these activities, it was suggested that local authorities be persuaded to refuse the necessary permits or solve the problem in another way.

A young Sardinian MP, who was a member of the Parliament Transport Committee, was informed about the matter by a BSCI member and in 1997 decided to present a Parliamentary bill dealing expressly with the subject; this was given the number 4214.

The basic principle of the bill was that it was a criminal offence a) to carry out activities or maintain conditions on one's own land which might attract birds, and b) not to adopt every suitable measure to eliminate or reduce the risk of bird strike. The legal precedent in support of this concept was the Italian regulation regarding obstacles to air navigation, which was modified in 1963 to comply with ICAO Annex 14.

As for the consequences with respect to individual rights (property) which were protected by the Italian Constitution, this matter could only be dealt with by Parliamentary legislation.

The bill called for restrictions to be introduced concerning the creation of dumping grounds, pools, artificial lakes, food processing and conservation plant, nature reserves, plantations and any other activity capable of attracting birds of any species. These limits extended as far as 5 km from the runways, but exceptions were to be allowed where work or activities were recognised not to be of danger.

Another important point was that aircraft owners would be obliged to report bird strike events to the proper airport authority. In fact, as has already been mentioned, one of the main problems was the lack of information on the number and seriousness of impacts, particularly in relation to the number of flights at a specific airport.

Finally, though this part of the Bill was not drafted in BSCI circles, it would have been acceptable to kill birds, in cases of absolute necessity for aircraft safety.

It is difficult to say what legal value a bill has; in formal terms it has none. In some cases, however, the simple fact that it has been presented to

Parliament has an effect, even if only for the publicity it generates. It may prevent or slow down other contrary measures, or speed up initiatives that would have been slow to develop, and point them in a different direction from before.

In spite of the fact that Italy can be defined as a typical country with written laws and strict formalism (where, for example, past sentences do not have the binding value of legal precedent), it is, however, undeniable that the effect of Bill 4214, supported by substantial and influential scientific back-up, was to get things moving. Even if the bill were not passed with the current text, the legal situation and, above all, the way of thinking on this subject have undergone profound changes.

This concept was clear just a year later when, in 1998, Circular 13775 AC of 16th October 1998 was published in the Italian Official Gazette. The circular was originally a tool used for internal Government matters, by which directives from higher authorities were communicated to lower ones. Later, however, it took on the role of secondary source of regulation. In the middle of the process of reform of Italian Civil Aviation, with some functions and tasks being transferred from the Government to private airport operators, the above-mentioned Circular introduced "*the adoption of suitable measures to prevent bird hazard*" as one of the duties of the private companies.

This statement is relevant not just because it clearly identifies those responsible for managing wildlife, but above all because this activity now becomes one of the airport services to be provided at an airport, just like snow-removal or grass-cutting.

It was another brick in the wall, still to be built, of the official technical regulations for prevention systems and bird dispersal at airports.

The time was ripe for facing the matter head-on.

1999 started with the dissolution of the Civil Aviation General Directorate. This Government branch, created in 1963, after the end of the Air Force monopoly in the field of Italian aeronautics, showed almost immediately the need for a thorough up-to-date reform. However, this was delayed for various reasons, until strong Government action was taken in the second half of the nineties.

The result was the setting up of the E.N.A.C. (National Civil Aviation Agency) which took over three previous Civil Aviation organizations.

The BSCI immediately established connections with the new ENAC managers and showed them the situation the country was in. On behalf of the ENAC a greatly needed text was therefore drafted of technical regulations, as well as some guidelines for controlling the airport bird strike phenomenon.

It was a significant coincidence that the directive on the bird strike hazard was also the first circular issued by the new Agency (APT 01 of 20.5.1999), as if it wanted to show the commitment of the new board and their will to seriously face this problem.

Circular APT 01 starts with some basic statements: first, it defines the air space under examination, which covers not only the airport area, but also its surroundings up to a height of 300 ft. The second basic issue is the obligation to carry out a study of fauna and other natural elements, when even only one of the following events has occurred in the above-mentioned air space during the last twelve months: a) bird strikes with a ratio of 5 or more per 10,000 movements per year; b) multiple impact or engine ingestion; c) damaging bird strike; d) repetitive presence of birds capable of causing events described in a) and b).

With this regulation, improvisation is ruled out once and for all, and prevention and control systems are anchored to a solid scientific base, which only proper ornithological and environmental research can provide.

Furthermore, this study has to be carried out over a whole year, thus including all the season cycles of the area.

Research results must be submitted to the ENAC and the BSCI, who will determine whether and how specific wildlife management and control plans will be required.

The Circular also includes the analysis of the results of the plan, to be gained by the comparison between current bird strike statistics and those of the previous period.

Moreover, it requires a new plan to be implemented if the first one is not successful.

The ENAC did not take the regulation to the point of specifying details of the ecological study, though it listed some public institutions, such as universities or research centers, that could do this.

It did provide, however, some guidelines for organizing the hazard management plan, making use also in this case of international experience.

The measures to alleviate wildlife hazards are divided into four categories: 1) information; 2) fauna control; 3) bloodless dispersal; 4) monitoring.

The first concerns the active participation of all airport employees and the relaying of information to flight crews before and during the flight.

The second takes into consideration airport environment control (i.e. agricultural contract review, grass-cutting, removal of bird-attracting factors, ecological management of large covered areas, external risk assessment).

The third more traditional measure consists of identifying bloodless harassment and dispersal means, highlighting the need for a system using a permanent device when a specific management and control plan had to be adopted.

Lastly, control action reaches its natural conclusion in monitoring, i.e. in the analysis of results and in the daily control and registration of bird presence.

The ENAC then draws attention to another basic matter: all airports must provide a permanent organisation in charge of complying with the above-

mentioned prevention and control directives. This is the BIRD CONTROL UNIT, for which minimum equipment is listed. This is a fundamental step in the fight against bird strike danger: a continuous airport patrol on a regular but unpredictable basis, carried out by a well-trained group, makes an airport an unpleasant and unsafe place for birds.

Circular APT 01 makes great use of the experience of other countries, in particular the USA, Canada, Germany and France, blending these in with the Italian juridical principles and rules .

The intention is to issue regulations to entirely cover the matter inside airports, where about 65% of total impacts occur.

However, the next problem still to be solved is how to achieve actual application of this regulation at Italian airports. An important aspect is the effective cost of the organisation required both for the study and the management and control plan.

In many cases, it might constitute a large investment that minor airports in the hands of private operators might not be able to afford in the short term.

Let's imagine, for example, a sudden modification in contracts regarding airport land use for agricultural purposes (in some countries this practice is entirely forbidden, or strictly limited), not cutting grass too short, maintenance work in large hangars, the grading and elimination of depressions in the ground, pools, etc.

It is a real problem, but even in this case a glance at the legal precedents concerning compensation for damages due to airliner accidents should be sufficient to persuade airport operators of the need for an investment plan to face the bird strike risk. The risk is therefore double: for air safety and, on the other hand, for the airport operator survival itself.

Italian law, for example, establishes a minimum company capital for a small, low-traffic, airport operator at US\$ 3.5 million; a case of bird ingestion by an airliner involving two engines, even without any catastrophic event, could determine such damage compensation as to cause the company to go bankrupt.

And furthermore, the insurance companies probably would not cover these costs, especially if they could demonstrate that the prevention and control measures, suggested or imposed, had not actually been adopted.

Moreover, the international trend is oriented towards considering the threat of damage compensation as the tool to get the proper safety measures adopted.

While in Civil Aviation circles the effect of the regulation on the airport operators directly instructed to take care of the bird problem was being evaluated, in October 1999 a draft of the new Navigation Code (aeronautical part) was presented to the Government.

The old Code, dating back to 1942, had proved itself completely outdated over the years, especially in the matter of airport management by private

companies, which was not included at all in the regulation (in 1942 all airports were generally military airports opened to civil air traffic, and anyhow State-owned and run).

Parliament therefore entrusted the Government, and on its behalf the Ministry of Transport, with the task of preparing a draft of a new Code to be submitted to and approved by Parliament itself.

The Ministry, in its turn, entrusted this work to a selected group of university teachers, the best Italian experts in air navigation law.

During the consultations with this working group, the BSCI delegates brought up Parliament Bill 4214 of 1997, which was still under examination. They suggested the most relevant parts of the Bill be included in the draft of the new Code, with the aim of regulating once and for all the controversial and delicate question of private property rights in the vicinity of airports.

That suggestion was accepted and now the general principles of the question have reached the highest and most authoritative level: a Government draft.

Basically, one article of the draft of the new Code locates for each airport a defined area, up to 5 km outside its boundaries, regardless of land ownership. Inside this external area the law will limit many human activities and settlements, such as garbage dumps, food processing and conservation plants, plantations and any other work or activity potentially capable of attracting birds.

Moreover, ENAC approval will be required for carrying out this kind of work and activities capable of attracting birds.

This statement is reinforced by a further article that provides for a sanction for trespassers, inflicted by a criminal Court. Failure to comply with air safety rules, even with respect to bird strikes, is from now on considered a criminal offence.

In the document attached to the text draft the experts comprising the working group point out that such a regulation needs to be incorporated in the Italian juridical *corpus* in order to control air navigation risk factors, thus including among them the presence of birds around airports.

This assertion of the principle is extremely relevant for interpretative purposes, as it allows the use of “analogy” and “extensive interpretation”, two ancient juridical tools belonging to Roman law, to be used when a case or situation is not properly provided for by the law.

It would surely be too optimistic to hope that the new Code draft be approved by Parliament in its entire original version. However, it is reasonable to suppose that it might be passed with some modifications not affecting the general principles. In this way it will constitute the last link of a chain of rules intended to regulate all legal aspects related to the bird strike hazard.

Conclusions

As far as the problem of the competent authority is concerned and responsibility for adopting proper prevention and bird dispersal action, it has finally been clarified that these pertain to the (private) airport operator, while the public authorities only have tasks of supervision and control over them.

The action to be undertaken and the measures to be adopted inside airports have been clearly and thoroughly detailed in ENAC Circular APT 01 of 20.5.99.

As far as the delicate question of regulating activities outside airports is concerned, either Parliamentary Bill 4214 or the new Navigation Code draft dealt with this subject completely, giving ample powers to Civil Aviation authorities to intervene on privately-owned property outside airports. It would also appear to be the first time that a rule of this kind has extended its power so widely outside the specific airport environment.

The general picture from a legal point of view seems to be complete, once at least one of the two above-mentioned bills has been approved, but the existing regulations are already sufficient to consider Italy fully compliant with point 9.5 of ICAO Annex 14.

The BSCI therefore firmly believed, and still does, that a good system of regulation and prohibition can constitute the primary foundations from which to carry out concrete action for safe land use in airport territory and surroundings, as well as for bird harassment and dispersal.

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