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AERODROME BIRD HAZARD CONTROL TRAINING IN THE UK

Nigel Deacon
Airfield Wildlife Management Limited, 6 East Farm, East Charleton,
Kingsbridge, Devon TQ7 2AR, UK
Email: nigel@ndeacon.demon.co.uk

Abstract

Formal training courses for persons involved in bird hazard control on civil and military aerodromes have been run since the late 1960s. Over the years, course content has evolved to reflect the ever-increasing knowledge and expertise available, and to improve presentation. The current 3-day course was developed for the Civil Aviation Authority. The syllabus follows a sequence to build up an understanding of bird control strategy, starting with the nature and severity of the bird hazard, and progressing through bird biology, habitat management on and off the airfield, appropriate (and inappropriate) dispersal techniques, operations, and record keeping and analysis. Increasingly, revision and updating courses are provided for experienced staff. Management courses are run annually for persons responsible for planning and providing resources for bird hazard control, and for ensuring that standards are maintained. For many years, about 50 people were trained each year. However, from the mid-1990s, the CAA's requirement for the introduction of safety management systems on civil airports has resulted in nearly all staff who undertake bird dispersal operations, and their supervisors and managers, attending courses. Over 100 persons are now trained annually on residential courses and at their own aerodromes.

Key Words: Hazard management, Bird control team, Training

1. Background

Aerodrome bird hazard control in the UK is based on habitat management to minimize the attraction for birds and man-based surveillance and dispersal. This approach has advantages and disadvantages. Applied correctly, it reduces infestation by hazardous birds to very low levels, and birdstrikes proportionately. However, it is dependent on the continuous availability of manpower with specialist knowledge and skills to manage and implement it. Specialist bird control staff are not generally recruited already qualified: they come from a fire service, airfield operations or ATC background. Therefore, training courses are necessary. From the start, course content has been based on best practice as determined by research conducted for the Royal Air Force and Civil Aviation Authority, and advocated in a series of CAA publications (reference 1). Therefore, policy and procedures have been consistent, and UK aerodrome operators have mostly avoided the pitfalls and distractions of experimenting with untried or inappropriate methods, and of 're-inventing the wheel'.

2. History

The use of recorded distress calls to disperse birds from airfields came into use on Royal Air Force stations and several civil airports from the mid-1960s. Because distress calls are not a simple 'bird scarer' it was immediately apparent that training would be necessary for staff using the equipment. Firstly, people must identify the bird species to be dispersed to be able to select the appropriate recording. Then, the calls must be broadcast correctly and the target birds' reactions anticipated and understood.

At that time, RAF fire service personnel were tasked with bird dispersal. Too many people were involved for the biologists at the Ministry of Agriculture, Fisheries and Food's Worplesdon Laboratory (now MAFF Central Science Laboratory), who had developed the technique, to train them all. It was decided, therefore, that training sessions would be held at Worplesdon for the RAF's Fire Service instructors, who could then deliver lectures to new intakes of firefighters in training at RAF Catterick. This led to the first hard lesson about aerodrome bird hazard control training. It is not possible to pass on expertise through people with no practical or operational involvement. It quickly became apparent that strange beliefs and practices that bore no relation to the original message were proliferating on RAF stations. Further, it was soon evident that the expertise could only be imparted effectively by specialists with a broad experience of aerodrome bird hazards and their control. Later, we were to learn that the expertise is not self-sustaining on aerodromes: management and staff require periodic re-training.

As the courses for RAF fire service instructors involved only very small numbers of personnel at one time, staff from civil aerodromes were also invited to attend. This was the beginning of the training programme that has evolved to the present day.

In 1973, the RAF introduced dedicated bird control units on an increasing number of stations. Although Worplesdon Laboratory was able to meet the expanding training requirement, there was insufficient accommodation available locally. The courses moved to a series of RAF stations, which hosted them until bird hazard control for the RAF was contracted out to specialist companies in the late 1980s. Subsequently, there was no longer a training requirement for military personnel and the Civil Aviation Authority organized courses, which were held at civilian training centres and colleges. In 1992, AWM took over the running of the CAA courses, while MAFF Central Science Laboratory continues to provide courses on demand for some BAA Airports and the RAF.

3. The Courses

3.1 Development

Initially, courses were designed simply to enable people to disperse birds with distress calls and, thus, concentrated on the identification of the appropriate species and the correct use of the equipment. Bird scaring cartridges were already in use on many aerodromes and some instruction on their use was included almost immediately. From the start, students were taken on field trips to see and identify hazardous birds and for demonstrations of dispersal with distress calls. By 1980, the courses had expanded to 4 days to include more lectures on birdstrikes, the biology of hazardous species on aerodromes, other control methods, operations, and habitat management, with fieldwork on 4 afternoons. After the loss of cheap accommodation with the RAF, and with a continually expanding and more technical syllabus, the course was reduced to 3 days, mostly in the classroom, but with a single extended fieldwork trip. Recently, self-assessment sessions have been introduced to engage the students in practical identification exercises and in the assessment of various aspects of bird control on fictitious aerodromes – see typical course programme at Annex 1. Two or three residential courses are held each year but, in the 1990s, there has been an increasing trend towards additional courses on-site at airports that sometimes need to train a number of staff at the same time. This has provided opportunities to ‘tailor’ lectures on the hazardous bird species to include information on local populations and behaviour.

3.2 Content

The course content has developed with improving training techniques, the development of more and better expertise, and with the need to make it consistent with the evolving safety management culture in CAA. However, the basic structure has remained the same throughout. The current syllabus includes lectures on each of several major topics, as follows:-

- Birdstrikes. The circumstances of a number of accidents are reviewed to demonstrate to students the inescapable conclusions of applying risk assessment methodology to the birdstrike hazard (reference 2). That is that an accident is a possible consequence of operating aircraft among the populations of birds that are common on and around their own aerodromes. This is a fundamental 'scene setter' and is equally emphasized on revision courses and courses for management.

- Bird biology. A thorough grounding in the identification, ecology and behaviour of the birds that commonly frequent airfields is presented. This demonstrates that each species presents a different hazard, which also varies in a complex manner with time of day, season and weather. Sound ornithological background knowledge is fundamental to understanding and controlling the bird situations encountered on the airfield. Bird controllers who lack it are confused by the behaviour of the birds they encounter and surprised and frustrated by their inability to control them. Over two hundred 35mm transparencies, the majority depicting birds in an airfield context, are used to illustrate this part of the course.

- Airfield ecology and habitat management. These lectures demonstrate that, in the UK and western Europe, airfields attract birds – commonly more birds than the surrounding countryside – because they are large, flat expanses of permanent grassland exploited by those flocking species that frequent open country, and feed on soil invertebrates. Airfields can provide many other habitats, and diversity attracts more birds of more species to use the airfields more frequently in more different ways. Managing the habitat to reduce attractions and diversity is an important principle of airfield bird control and its implementation requires management action. However, it is stressed that the bird controller is the 'end user' of habitat management, whose task can be made impossible if it is poorly implemented. Therefore, field staff have a key role in monitoring, identifying problems, and alerting management of the need for action.

- Active bird control: dispersal, shooting and trapping. The starting point is that birds can only be persuaded to vacate airfields in the long term if they perceive a real threat. A range of automatic and 'novel' devices is described, and the inevitable habituation that renders them useless on

aerodromes is explained. The advantages of man-operated systems in circumventing habituation are stressed. Appropriate applications for standard man-operated devices are described, and detailed practical instruction given on their effective and safe operation. The biological implications of removing birds by shooting and trapping from large migratory and small local populations are explained, and the situations in which shooting is either inappropriate, useful, or essential are thus determined.

- Planning, organization and management of aerodrome bird control. For operational bird controllers, this is primarily a description of the value of maintaining records that can be used bird to monitor bird hazards and the success of the bird control plan, and also the performance of the bird controllers. It is stressed that records of bird activity and control action are commonly the only tangible and immediate products of bird control operations. In the longer term, birdstrike records provide useful insights into many aspects of the bird hazard and its control, but they cannot be used in day to day quality management.

3.3 Lecturing staff

The subject is complex and hazards vary markedly between aerodromes. Therefore wide background knowledge and practical experience is necessary to deliver an authoritative presentation. The lecturers are graduates in biological science with backgrounds in research and in organizing and managing bird hazard control operations on many civil and military aerodromes throughout the UK. The latter has included frequent experience working bird controller shifts on the airfields.

4. Basic and Revision Courses

On many smaller aerodromes, bird dispersal is a secondary duty, commonly for firefighters, and patrols are carried out at regular intervals and/or on call-out by air traffic control. For staff with this restricted role, a more basic form of training may be appropriate, but ***only if*** their activities are monitored and managed by a bird control co-ordinator who has undertaken both the full 3 day course and the management course (see 5 below). The course sequence follows the same logical development as the ‘full’ course – a specimen timetable is shown at Annex 2. The one-day courses are always held on-site and, usually the entire team is trained at one visit, with the course repeated several times to cover each shift of workers. The timetable is divided into two 4-hour sessions so that, on a single day, ‘early’ and ‘late’ shifts may each attend one session. The same basic syllabus is also used for periodic revision

courses but, within lectures, the emphasis is necessarily rather different for experienced staff than for new intake students.

5. Management Courses

The potential of bird control organizations is often not fulfilled because managers lack the background knowledge to support the operational teams fully. The course is designed to equip persons responsible for the planning, management and standards maintenance of bird hazard control operations – airfield operations managers, senior fire officers & air traffic control officers, and bird control co-ordinators - to develop a bird hazard control plan for the aerodrome manual and, subsequently, to ensure that the plan is implemented and standards are maintained. The programme tends to change more frequently than that of the bird controllers' course, but the topics covered and their sequence provide a guide for the development of an auditable bird control plan consistent with safety management principles. An example of the most recent course programme is at Annex 3.

6. Numbers of People Trained

For most of the 1970s and 80s, two or, sometimes three courses were held each year with 20-30 students, about half of whom (***i.e.*** about 30 ***per annum***) came from civil aerodromes. The remainder were RAF personnel but, as the military is no longer directly involved in bird control operations, these people can be excluded from comparisons. Between 1992 (when AWM started running CAA's courses) and 1995, an average of 35 people were trained in each year. From 1995, the CAA's Aerodrome Safety Management Initiative required civil aerodromes to produce and implement safety management systems that include comprehensive bird control plans (reference 3). Safety management requires that staff receive adequate training in the skills needed to do their jobs effectively and safely. Previously, on many aerodromes, only a small proportion of staff involved in bird control had received formal training. The situation has now been transformed and nearly all staff have been trained or are trained shortly after recruitment. Between 1996 and 1999, an average of about 80 persons/year have attended the full CAA 3-day course, with a further 60 each year receiving 1 day basic and revision training. Usually, a single 1-day management course is held each year, and attended by 15-20 students. Thus, the expertise available on aerodromes may be judged by the growth from a throughput of about 30 students a very few years ago, to 150-160 bird controllers and managers per year by the end of the 20th century.

References

1. Civil Aviation Authority. 1998. Aerodrome Bird Control. CAP680. CAA, London.
2. Rochard, J B A. 2000 (this conference). The UK Civil Aviation Authority's Approach to Bird Hazard Risk Assessment. IBSC 25 Working Paper (?)
3. Rochard, J B A. 1996. Airfield Bird Control – Setting the Standards. IBSC 23 Working Paper 32. 311-318.

Annex 1: Airfield Bird Hazard Control Course Programme

MONDAY EVENING

1700	DINNER
2000-2100	Meet & greet

TUESDAY

0830-0845	Course introduction: aims, content & layout
0845-0945	Birdstrikes
0945-1030	Bird biology & identification techniques
1030-1045	COFFEE BREAK
1045-1145	Gulls: identification; breeding; winter ecology; on aerodromes
1145-1200	Video - gulls
1200-1230	Grassland plovers: identification and biology
1230-1330	LUNCH
1330-1400	Grassland plovers: continued
1400-1445	Other waders: identification and biology
1445-1530	Self-assessment session: identification and biology
1530-1545	TEA BREAK
1545-1615	Corvids: identification and biology
1615-1630	Video - rooks
1630-1700	Starlings: identification and biology

WEDNESDAY

0830-0900	Pigeons: identification and biology
0900-0945	Less common hazardous species and small birds
0945-1030	Airfield ecology and habitat management
1030-1045	COFFEE BREAK
1045-1115	Self-assessment exercise: identification & biology
1115-1145	Airfield long grass
1145-1230	Grass management
1230-1330	LUNCH
1330-1430	Self-assessment exercises: habitat management
1430-1500	Principles of bird scaring
1500-1530	Distress calls: theory
1530-1545	TEA BREAK
1545-1615	Distress calls - practical applications and equipment
1615-1700	Bird Scaring Cartridges and other standard dispersal methods

THURSDAY

0830-0915	Other techniques: automatic scarers, falconry, etc
0915-0930	Birds and the Law
1000-1030	Removing birds: shooting and trapping
1030-1045	COFFEE BREAK
1045-1115	Special operations: roosts, rookeries, birds in hangars
1115-1145	Self-assessment exercise: equipment and its use
1115-1215	Bird control operations
1215-1300	LUNCH

1300-dusk	Fieldwork: identification, dispersal demonstrations, observations of behaviour, visit to roost

FRIDAY

0830-0915	CAA: auditing and safeguarding
0915-1000	Record keeping, analysis and interpretation
1015-1030	Recording and interpreting birdstrikes.
1030-1045	COFFEE
1045-1130	Self-assessment exercise: assessing bird hazard control standards
1130-1200	Final revision session
1200-1230	Course critique. End of course

Annex 2: Airfield Bird Hazard Control Introductory and Revision Course Programme

SESSION 1

15 minutes	Course introduction: aims, layout & content
30 minutes	Birdstrikes; principles of airfield bird control
45 minutes	Gulls: identification, biology & use of airfields
30 minutes	Lapwings and other waders: identification, biology & use of airfields
15 minutes	TEA/COFFEE BREAK
30 minutes	Corvids, Starlings, pigeons & other species
45 minutes	Aerodrome ecology & habitat management
30 minutes	Principles of bird scaring

SESSION 2

60 minutes	Distress calls: theory and practical applications
60 minutes	Pyrotechnics & other scaring techniques
15 minutes	COFFEE/TEA BREAK
30 minutes	Shooting, trapping, control in hangars, rookeries, starling roosts, the law
45 minutes	Operations: detection, patrolling, operating hours, operating at night
30 minutes	Revision, discussion, end of course

Annex 3: Planning and Managing Aerodrome Bird Hazard Control Course Programme

Monday

1930	DINNER

Tuesday

0900-1000	**Birdstrikes:** Accident characteristics; hazard related to species and controllability;
1000-1030	**Risk assessment and mitigation:** methodology; priority group species.
1030-1045	COFFEE BREAK
1045-1115	**Aerodrome manual:** bird control hazard plan: aims; policy; responsibilities; staff TORs; habitat management; operations; performance monitoring; record keeping; training; safety.
1115-1145	**Habitat management - grass:** long grass principles; aims; maintenance.
1145-1230	**Habitat management - grass:** common problems and failings.
1230-1330	LUNCH
1330-1415	**Habitat Management:** monitoring and controlling bird attractants on and around the aerodrome; landscaping; agriculture.
1415-1515	**Aerodrome Safeguarding:** safeguarding through the local authority planning process; an aerodrome bird self-safeguarding system; bird-attracting developments (landfills, water, sewage, nature reserves and landscaping); mitigation measures; guaranteeing safe operation; monitoring.
1515-1530	TEA BREAK
1530-1600	**Bird scaring:** principles; habituation; man-based systems; automatic systems.
1600-1700	**Equipment.** Bio-acoustics; bird scaring cartridges; other scarers; ancillary equipment; standards; operating procedures; safety.
1930	DINNER

Wednesday

0830-0915	**Bird control operations:** detection and alerting strategies; patrolling.
0915-0945	**Night-time operations:** patrol & dispersal strategy.
0945-1030	**Removing birds:** the Law; shooting; trapping.
1030-1045	COFFEE BREAK

1045-1130	**Record keeping:** log book; bird counts.
1130-1200	**Record keeping:** birdstrike reporting**.**
1200-1230	General discussion; problems raised by delegates; end of course.
1230	LUNCH