

**BY THE ORDER OF THE COMMANDER**

**JOINT BASE CHARLESTON  
INSTRUCTION (JBCI) 91-2121  
1 AUGUST 2010**

*Safety*

**THE BIRD/WILDLIFE AIRCRAFT STRIKE  
HAZARD (BASH) REDUCTION PROGRAM**

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction outlines procedures to minimize the Bird Aircraft Strike Hazard (BASH) to aircraft operating at Joint Base Charleston and North Air Field (NAAF). It applies to the following agencies: Charleston Air Traffic Control Tower, 628 ABW/SE, 437 AW/SE, 315 AW/SE, 437 AW/OG, 315 AW/OG, 437 AW/MXG, 628 ABW/MSG, SEADS OL-A / LGGSI, 628 CS/SCMV, 628 ABW/CP and all tenet unit flying squadrons. It implements AFI 91-204, *Safety Investigations and Reports* AFI 91-202, *The US Air Force Mishap Prevention Program* and AFP 91-212, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques*. It is not applicable to Air National Guard Units. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at <https://afrims.amc.af.mil/>. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF IMT 847, *Recommendation for Change of Publication*; route AF IMT 847s from the field through the appropriate functional chain of command.

**SUMMARY OF CHANGES**

This document has been substantially revised and must be completely reviewed.

## 1. General:

1.1. BASH Phase Conditions. A moderate wildlife-aircraft strike hazard exists at Joint Base Charleston, NAAF, and the surrounding areas due to resident and migratory wildlife. Daily and seasonal bird movements, as well movement from non-flying wildlife, create a hazard to aircraft operations. All pilots and operations supervisors must be alert to these dangers, which can be sub-divided into categories as follows:

1.1.1. Migratory bird threat: Joint Base Charleston lies along a major migratory route and attracts species for rest and feeding due to suitable habitats. Some species migrate through the airfield at particular times of the year increasing the total amount of birds at Joint Base Charleston and NAAF. Mitigation is accomplished through the use of harassment and depredation, the use of a USDA Biologist, and by restricting flying operations. During heightened times of bird migration, Phase II BASH procedures may be implemented as listed in AFI 11-2C-17 V3, *C-17 Operation Procedures*, 437 AW Flight Crew Bulletin (FCB) and/or 437 AW Flight Crew Information File (FCIF).

1.1.2. Indigenous bird threat: Joint Base Charleston and NAAF are inhabited year-round by several species of birds regardless of the migration of other bird species.

1.1.3. Local wildlife threat: Many species of wildlife (deer, coyote, foxes, etc.) represent a high risk to flying operations at Joint Base Charleston and NAAF.

## 1.2. BASH Phase Periods.

1.2.1. When the local bird population is comprised mostly of indigenous birds rather than migrating birds, Phase I BASH procedures, as outlined in AFI 11-2C-17 V3, FCBs and/or FCIFs are in effect.

1.2.2. The 437 OG/CC establishes a Phase II period at Joint Base Charleston and NAAF based on the bird migration period, increased birdstrike incidents and whether or not Phase II procedures would have prevented the strikes. If bird migration is prolonged, or started earlier than normal, the 437 OG/CC may modify Phase II periods as necessary, with recommendations provided by 437 AW/SEF.

## 1.3. Bird Watch Condition (BWC).

1.3.1. Completely separate from the BASH Phase I or II distinction, the BWC measures an immediate and continuously changing bird threat at Joint Base Charleston and NAAF. It measures the threat only within close proximity to the runways. It does not provide data or bird activity information for low level routes or other airfields (consult the Bird Avoidance Model (BAM) and Avian Hazard Avoidance System (AHAS) databases for this information). The threat is determined by observation of bird type, the quantity of birds, and the proximity of the birds to the runways.

1.3.2. Changing BWC. BWC is formally changed by 437 OSS/OSA. Recommendations for BWC changes can be made by any individual (aircrew, safety, etc.), but the final approval authority for changing the BWC remains with Airfield Operations. Personnel observing bird concentrations on the airfield, as defined in [1.3.2.1.](#) through [1.3.2.3.](#), should call 437 OSS/OSA

with the appropriate information. This information should include (at a minimum) the type, quantity, and location of the birds. Airfield Operations will pass all pertinent information to the Charleston Air Traffic Control Tower and 628 ABW/CP. Furthermore, they will update the base operations airfield status board in base operations.

**EXCEPTION:** If the USDA Biologist sees a threat that represents an immediate or extreme threat, they will call the tower (on either ground or tower frequency) with all appropriate information (change in BWC, location of species, species type, other important information, etc.) and immediately disperse/eradicate the species. Upon completion, the USDA Biologist will brief Airfield Operations on the situation. Airfield Operations will pass all pertinent information to the Command Post and will update the airfield board in base operations.

### **1.3.2.1. There are three types of BWC.**

1.3.2.1.1. Bird watch condition LOW is defined as no significant threat of bird activity in the local pattern. Flying operations are not restricted.

1.3.2.1.2. Bird watch condition MODERATE is defined as concentrations of 10 to 15 large birds (egrets, waterfowl, raptors, gulls, etc.) or 15 to 30 small birds (terns, swallows, etc.) observed in locations that represent an increased potential for strike.

1.3.2.1.3. Bird watch condition SEVERE is defined as heavy concentrations of birds (more than 15 large birds or 30 small birds) on or above the runway, taxiways, in-field areas and departure or arrival routes or in areas that represent an imminent hazard to safe flying operations.

1.3.2.4. The different BWC levels may restrict flying operations. Check the most current 437 AW FCB/FCIF for the latest guidance.

**1.4. Bird/Hazard Working Group (BHWG).** A coordinated agency effort aimed primarily at preventive measures that provide the best chance of avoiding a collision between birds/wildlife and aircraft. The BHWG may meet monthly during phase II periods; otherwise it meets once a quarter. The 437 AW/CV chairs the BHWG and members include: 437 OG (OG/CC or CD), 437 MXG (MXG/CC or CD), Charleston Air Traffic Control Representative, 437 OSS/OSA (Airfield Management), the USDA Biologist, 628 CES/CC, 628 CES/CEV, SEADS OL-A / LGGSI, 437 AW/SEF, Charleston County Aviation Authority Director of Operations, and tenet flying squadron safety representatives.

**1.5. Birdstrike Determination.** Personnel will use the following guidance to determine the presence of a bird strike. If birdstrike is confirmed, use appropriate checklists to report the strike, collect remains, and wipe clean the area to avoid duplicate reports. Birdstrikes are defined as:

1.5.1. Any smudge accompanied by fleshy bird remains (i.e., down, feathers, body parts, etc.)

1.5.2. Any smudge that is close (within 2 inches) to new aircraft damage (i.e., a dent, hole in aircraft skin, etc.), with or without fleshy remains

1.5.3. Any smudge that does not meet the conditions of **1.5.1.** or **1.5.2.**, but is greater than 6 inches in length and reddish in color is a birdstrike. Other smudges will not be reported as bird strikes.

**NOTE:** These procedures do not relieve 437 MXG of the responsibility to conduct proper aircraft inspections. For instance, if a smudge is found on an engine inlet, deciding the smudge is not a bird strike does not mean an engine inspection should not be accomplished.

**1.6. Deer population control.** Deer inhabit areas within the boundaries of Joint Base Charleston and NAAF. Deer population control will be attained through the use of the recreational hunting program, deer depredation, and non-lethal methods of control. The OPR for deer management is 437 AW Flight Safety. The following agencies actively help achieve our deer control:

1.6.1. 628 CES/CEVP controls the recreational deer hunting program. The hunting program operates four days per week, Friday through Monday, during the South Carolina deer hunting season (15 August through 1 January) IAW all existing federal and state laws. Any questions regarding rules and procedures for the recreational deer hunting program will be referred to 628 CES/CEVP.

1.6.2. Deer depredation may be accomplished by the USDA Biologist, 628 CES/CEVP, 437 AW/SEF, and 437 OSS/OSA. Depredation activities will occur year round. During hunting season (see **1.6.1.**), depredation will only occur three days per week, Tuesday through Thursday to allow the USDA Biologist to perform wildlife population surveys. Other than hunting season, depredation activities may occur at any time. All depredation activities will be conducted IAW laws and procedures on file with 628 CES/CEVP. Questions regarding these rules and laws will be referred to 628 CES/CEVP.

**1.7. Disposal of depredated animals.** Animal depredation must be conducted IAW all federal and state laws. Applicable depredation permits are kept for the base at 628 CES/CEVP. Animals depredated are to be disposed of by the person who performed the depredation and IAW federal and state laws on file at the 628 CES/CEVP. Animal remains may be donated, but only after a hold harmless agreement has been signed and placed on file with 437 AW/SEF.

## **2. Roles and Responsibilities:**

2.1. 437 AW/SEF will:

2.1.1. Serve as the overall OPR for the Joint Base Charleston and NAAF BASH programs.

2.1.2. Serve as the overall OPR for the BHWG.

2.1.3. Record and report bird/animal strikes IAW AFI 91-202 and AFI 91-204.

2.1.4. Recommend implementation/termination of BASH Phase II procedures to 437 OG/CC in response to significant changes in bird migration patterns, strike activity, and recommendation of the USDA Biologist.

2.1.5. Establish an educational program in conjunction with tenet unit flying squadron safety offices to acquaint aircrews with the hazards associated with bird migration and placing particular emphasis on BASH Phase II periods.

2.1.6. Coordinate with all tenet unit and transient aircrews and maintenance for collection of remains after strikes. Identify bird or animal remains locally if expertise is available. If identification of bird/animal remains is unavailable, 437 AW/SEF or the USDA Biologist will send remains to:

Strikes That Require Immediate Identification

Smithsonian Institution  
Division of Birds, NHB, MRC 116  
10th and Constitution Ave., NW  
Washington, DC 20560

Normal Strikes

Feather Identification Lab  
Smithsonian Institution  
NHB, E-600, MRC 116  
P.O. Box 37012  
Washington, DC 20013-7012

2.1.7. Review the USDA Biologist's bird strike metrics and track their impact to the operational mission and will disseminate to these metrics to all tenet unit flying squadrons and the 437 MXG.

2.1.8. Initiate and/or track the progress of all projects designed to decrease the appeal of Joint Base Charleston and NAAF as a bird/wildlife habitat.

2.1.9. Establish and maintain a continuity folder on pertinent BASH data, metrics and project action plans.

2.1.10. Monitor BASH conditions at Joint Base Charleston and NAAF to ensure effectiveness and identify potential hazards.

2.1.11. Will present any significant findings to the BHWG and facilitate any actions required to reduce bird strike potential.

2.1.12. Maintain Joint Base Charleston and NAAF Wildlife Dispersal Team IAW AFPAM 91-212 and will identify the names of individuals selected for the dispersal team. These names will be forwarded to 628 CES/CEVP for addition to applicable federal and state permits.

2.2. 628 ABW/CES will:

2.2.1. Grass Height. Mow airfield to maintain a uniform grass height between 7 and 14 inches. Each installation BHWG will establish airfield mowing zone boundaries. Installations located in arid climates where growing grass is difficult may develop natural vegetation on the airfield to limit attractiveness to wildlife. These situations require comprehensive vegetation and wildlife hazard management and will be reviewed individually by AFSC/SEFW for approval. MAJCOM safety offices may request a waiver to grass height restrictions from AFSC/SEFW.

2.2.2. (AMC) Grass Height. HQ AMC/A7V has determined that 11 inches is an optimum height to set mowing equipment to maintain the 7-14 inch standard. This takes into account grass lying over from winds, snow, etc.

2.2.3. Eliminate all growth in airfield ditches. Perform weekly checks to monitor contractor performance.

2.2.4. Identify and drain standing water in low areas to reduce bird/wildlife habitat.

Exception: Areas that have been designated as wetlands will not be drained.

2.2.5. Maintain homogeneous vegetation areas on the airfield through elimination of stands of brush and shrubs from grassy areas. Perform monthly checks to verify conditions.

2.2.6. Inspect areas of the airfield that are subject to water pooling for adequate insect control.

2.2.7. Arrange for application of pesticides, seed suppressants and herbicides, as necessary, to eliminate attractants to bird populations.

2.2.8. Obtain the federal and state wildlife depredation permits for use by recreational deer hunters, 437 AW/SEF, 437 OSS/OSA, and the USDA Biologist at Joint Base Charleston and NAAF. Names to be included on permits (other than recreational deer hunting) will be forwarded by 437 AW/SEF to 628 CES/CEVP.

2.2.9. Submit all required reports for depredation activities to appropriate regulatory agencies using data provided by the USDA Biologist and 437 AW/SEF.

2.2.9.1. Manage the recreational deer hunting program at NAAF.

### **2.3. Charleston Air Traffic Control Tower will:**

2.3.1. Maintain communications with the USDA Biologists on the ground control frequency in order to coordinate a change in BWC at Joint Base Charleston.

2.3.2. Pass bird watch condition, as well as reported bird concentration and location, to military and civilian carriers operating at Joint Base Charleston during BWC moderate or severe via controller initiated broadcasts on the primary tower frequency.

### **2.4. 437 OSS/OSA will:**

2.4.1. Notify 628 ABW Command Post, 437 AW/SEF, and the air traffic control tower of BWC changes.

2.4.2. Notify aircrews as they file flight plan of significant bird activity on the airfield. Post the bird condition on the base operations airfield status board.

2.4.3. Keep a record of bird and deer activity noted during airfield inspections and all changes in bird status. Forward these metrics to 437 AW/SEF, W. Hill Blvd Bldg 302 Room 310, Joint Base Charleston SC 29404 and/or the USDA Biologist for presentation at BHWG.

2.4.4. Maintain a Bird Dispersal Team IAW AFPAM 91-212 and maintain appropriate weapons IAW AFMAN 91-201, Explosive Safety Standards. Airfield Management is responsible for all of the USDA Biologist's responsibilities during non-duty hours of BASH Phase I operations at

Joint Base Charleston and NAAF. During Phase II operations at Joint Base Charleston or at NAAF the contractor will be on-call during the non-duty hours.

2.4.5. In conjunction with the daily airfield inspection, report any bird hazard condition requiring the dispersal of birds to the USDA Biologist and/or 437 AW/SEF.

2.4.6. Coordinate with 628 ABW/CES to maintain airfield grass height IAW paragraph [2.2.1](#).

2.4.7. Coordinate publishing of BASH Phase II period in appropriate Flight Information Publications.

2.4.8. Coordinate with 628 ABW Command Post when BASH Phase II is implemented or discontinued to dispatch a birdstrike hazard advisory message to agencies that transit and fly transition at Joint Base Charleston.

## **2.5. USDA Biologist will:**

2.5.1. Report directly to 437 AW/SEF

2.5.2. Act as the primary executor of all wildlife dispersal efforts at Joint Base Charleston and NAAF IAW their Memorandum of Understanding, with assistance from 437 AW/SEF and 437 OSS/OSA as required.

2.5.3. Meet monthly with 437 AW/SEF to discuss the following conditions:

2.5.3.1. The status of the "clear zone" areas off the end of runways at Joint Base Charleston and NAAF.

2.5.3.2. Grass height, drainage ditch foliage, low area standing water, etc.

2.5.3.3. Phase I and Phase II forecasts and the associated priorities for the wildlife management contractor during these times.

2.5.4. Provide data on number and species killed to 628 CES/CEV to be used in preparing reports to be submitted to appropriate federal and state regulatory agencies and provide 437 AW/SEF with a copy of this information.

2.5.5. Coordinate trapping or depredation activities with 628 CES/CEVP. Keep 628 CES/CEVP informed of communication with federal and state regulatory agencies.

2.5.6. Change the BWC, if deemed necessary IAW paragraph [1.3.2](#). Under no circumstance should the contractor delay notification to the air traffic control tower, and subsequent dispersal of birds, to communicate with other agencies. The primary intent is to remove imminent hazards to the flying environment as quickly as possible.

2.5.7. Inform 437 OSS/OSA when entering or leaving the airfield.

**2.6. 437th Operations Group will:**

2.6.1. Issue specific BASH guidance to aircrew personnel through FCIFs and the FCB. Aircrew mission planning guidance and operating restrictions for both Phase I and Phase II will be permanently maintained in the FCB's or in 11-2C-17 Vol 3, Local Procedures.

**2.7. 437th Maintenance Group will:**

2.7.1. Ensure all bird strikes are reported to 437 AW/SEF on AF Form 853, *Air Force Bird Strike Report*, or local 437 MXG Safety DOP/Incident/Mishap/No Drop Worksheet. Fax copy of the completed form to DSN 673-4030 or Commercial 843-963-4030.

2.7.2. Preserve non-fleshy bird remains if discovered on the aircraft regardless of size or amount. Follow procedures outlined in paragraph 1.4. concerning proper identification of birds strikes.

**2.8. 628 ABW/CP will:**

2.8.1. Notify all inbound crews when BWC is MODERATE or SEVERE on initial UHF/VHF contact.

2.8.2. Transmit in the blind on Command Post UHF/VHF frequency all changes in BWC.

2.8.3. Notify 437 AW/SEF for recommendations prior to notifying OG/CC. After normal duty hours, notification will be made to the on-call 437 AW/SEF Flight Safety Officer regarding all damaging bird strikes.

2.8.4. Relay all aircrew calls concerning bird activity on the airfield or low-level routes to 437 OSS/OSA personnel for action.

**2.9. 315 AW/SE and all tenet unit flying squadron safety offices will:**

2.9.1. Ensure aircrews participate in the BASH Reduction Program by promptly reporting all bird strikes and hazardous bird conditions to 437 AW/SEF, 628 ABW/CP, Base Operations and ATC.

2.9.2. Ensure aircrews use the BAM, AHAS, and other planning tools as directed by the 437 OG and 437 AW/SEF.

2.9.3. Brief aircrews on seasonal bird hazards. Movies, articles, and other information will be used as appropriate to maintain awareness.

2.9.4. Ensure that all trip kits are stocked with AF Form 853, and the 437 AW Bird Observation Worksheet. Ensure all completed forms are forwarded to 437 AW/SEF.

**2.10. 628 CS/SCMV (Visual Information Center) will:**

2.10.1. Provide photographic services to document bird/wildlife strikes and related activities as required.

2.10.2. Provide graphic support to publicize bird hazards and actions taken to minimize the risks as required.



**3. Information Collections, Records, and Forms.**

3.1. Information Collections. No information collections are created by this publication.

3.2. Records. All records created will be maintained IAW AFMAN 33-363.

3.3. Forms or IMTs Adopted. AF Form 853, *Air Force Bird Strike Report*.

JOHN M. WOOD, Colonel, USAF  
437 AW Commander

## Attachment 1

### GLOSSARY OF REFERENCES, TERMS, AND SUPPORTING INFORMATION

#### *References*

AFI 11-2C-17 V3, *C-17 Operation Procedures*,

AFI 91-202, *The US Air Force Mishap Prevention Program*,

AFI 91-204, *Safety investigations and Reports*,

AFI 91-212, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques*,

#### *Abbreviations and Acronyms*

**AHAS**—Avian Hazard Avoidance System

**BASH**—Bird/Wildlife Aircraft Strike Hazard

**BAM**—Bird Avoidance Model

**BHWG**—Bird Hazard Working Group

**BWC**—Bird Watch Condition

**FCB**—Flight Crew Bulletin

**FCIF**—Flight Crew Information File

**NAAF**—North Auxiliary Air Field