

**BY ORDER OF THE
MACDILL AIR FORCE BASE
COMMANDER (AMC)**

**MACDILL AIR FORCE BASE
INSTRUCTION**

91-212

30 JULY 2025

Safety



**MACDILL AIR FORCE BASE BIRD
AIRCRAFT STRIKE HAZARD (BASH)
PLAN**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This instruction implements Department of the Air Force Instruction (DAFI) 91-202, The US Air Force Mishap Prevention Program and DAFI 91-212, Bird/Wildlife Aircraft Strike Hazard (BASH) Management Program. It applies to the 6th Air Refueling Wing (6 ARW), 927th Air Refueling Wing (927 ARW), tenant units, and temporary duty (TDY) organizations on MacDill Air Force Base (AFB). This instruction incorporates DAFI 91-212 requirement, Bird/Wildlife Hazard Reduction Plan at MacDill AFB and provides a base program to minimize aircraft exposure to potentially hazardous wildlife strikes. Ensure that all records created as a result of processes prescribed in this publication are maintained IAW Air Force Instruction (AFI) 33-322, Records Management and Information Governance Program, and disposed of IAW Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS). Refer recommended changes and questions about this publication to the OPR using the Air Force (AF) Form 847, Recommendation for Change of Publication; route AF Forms 847 from the field through the appropriate functional chain of command. This publication may not be supplemented or further implemented/extended. The authorities to waive wing, unit, or delta level requirements in this publication are identified with a tier (“T-0, T-1, T-2, T-3”) number following the compliance statement. Submit requests for waivers through the chain of command to the appropriate tier waiver approval authority, or alternately, to the publication OPR for non-tiered compliance items. See Department of the Air Force Manual (DAFMAN) 90-161, Publishing Processes and Procedures, **Table A10.1** for a description of the authorities associated with the tier numbers.

SUMMARY OF CHANGES

This edition has been marginally revised to 1) standardize the format, grammar, and layout for readability; 2) improve the organization of chapters and content within each chapter; 3) modify and remove obsolete material, and improved word choice for applicability.

1. Background:

1.1. The MacDill Air Force Base (MAFB) Bird/Wildlife Aircraft Strike Hazard (BASH) threat comes from a wide range of resident and migratory bird species and wildlife. While BASH is a worldwide challenge, this instruction primarily focuses on the MacDill AFB area. The purpose of this plan is to provide a program designed to minimize aircraft exposure to potentially hazardous bird and wildlife strikes in the MAFB flying area. There is no way to eliminate BASH, and this instruction establishes procedures to mitigate risks, when possible.

1.2. If there is an aircraft strike of a bird, bat, or insect species federally listed or proposed for listing under the Endangered Species Act (ESA), 6 ARW/SE or USDA (as appropriate) will report this to 6 CES/CEIE and the U.S. Fish and Wildlife Service biologist on base. These species include, but are not limited to, Audubon's crested caracara (*Caracara plancus audubonii*), eastern black rail, (*Laterallus jamaicensis ssp. jamaicensis*), Everglade snail kite (*Rostrhamus sociabilis plumbeus*), monarch butterfly (*Danaus plexippus*), rufa red knot (*Calidris canutus rufa*), tricolored bat (*Perimyotis subflavus*), whooping crane (*Grus americana*), wood stork (*Mycteria americana*). Any injured or dead bald eagles (*Haliaeetus leucocephalus*) must also be reported in accordance with the Bald and Golden Eagle Protection Act (BGEPA).

2. Roles and Responsibilities.

2.1. The Deputy Commander (6 ARW/CD) will:

2.1.1. Chair the Bird Hazard Working Group (BHWG) meetings and approve/disapprove recommendations from the group.

2.1.2. Direct actions as necessary to manage BASH.

2.2. Wing Safety (6 ARW/SE) will:

2.2.1. Be the OPR of this program.

2.2.2. Facilitate BHWG meetings.

2.2.3. Prepare and maintain the basic plan and changes as required.

2.2.4. Establish a wildlife awareness program in conjunction with squadron flying safety officers. The program can include films, posters, information on wildlife hazards, reporting procedures, and operating restrictions.

2.2.5. Establish procedures for reporting and recording all wildlife strikes at MacDill AFB involving 6 ARW, 927 ARW, and tenant aircraft.

2.2.6. Collect information on migrations of local and seasonal wildlife activities through 6th Civil Engineer Squadron, Environmental (6 CES/CEIE), local, state, and private wildlife authorities.

2.2.7. Collect wildlife strike data from all MacDill AFB flying units and look for trends. Disseminate hazard data and metrics to BHWG and flying units from all available sources.

2.2.8. Coordinate and establish procedures for disseminating and terminating BIRD WATCH CONDITIONS (BWC).

2.2.9. Coordinate with aircrews, maintenance, and United States Department of Agriculture (USDA) Wildlife Services to ensure a blood specimen and/or portion of the non-fleshy wildlife remains are taken from the aircraft or airfield after a strike. Identify bird or animal remains locally if expertise is available. Send blood specimens, Deoxyribonucleic Acid (DNA), and/or feather fragments of all bird strikes to the Smithsonian Institution, Natural History Building, Division of Birds, Attn: Carla Dove, NHBE 610 MRC 116, 10th & Constitution Ave NW, Washington D.C. 20560.

2.2.10. Ensure that all wildlife strikes are entered into the Air Force Safety Center (AFSC) Air Force Safety Automated System (AFSAS).

2.2.11. Hold quarterly meetings with Airfield Operations Management and BASH personnel to advise and request changes to BASH procedures.

2.2.12. Perform duties as the funding acceptor for Wide Area Workflow.

2.3. Public Affairs (6 ARW/PA) will: Prepare initial press release concerning wildlife strikes and serve as the principal spokesperson on behalf of the commander when responding to news reporters.

2.4. Base Freedom of Information Act Office (6 CS/SCXK) will:

2.4.1. Process request for information concerning past wildlife strikes, major changes in operations, or pending projects to control wildlife populations or reduce potentially hazardous wildlife strikes by tasking the applicable organization to provide records responsive to the request.

2.4.2. 6 CS/SCXK contact information is 6 CS/SCXK(FOIA), 8011 Red Hibiscus Place, MacDill AFB, FL33621-5409, Phone : (813) 828 -5387/DSN 968-5387, Email : 6CS.SCBR@us.af.mil, FAX: (813) 828-9050/DSN 968-9050.

2.5. The Command Post (MacDill CP) will:

2.5.1. Notify the 6th Operations Group Commander (6 OG/CC), 927th Operations Group Commander (927 OG/CC), 50th Air Refueling Squadron Director of Operations (50 ARS/DO), 91st Air Refueling Squadron Director of Operations (91 ARS/DO), 63d Air Refueling Squadron Operations Coordinator (63 ARS/OC), 6th Air Refueling Wing Safety (6 ARW/SE), 6th Maintenance Group Commander (6 MXG/CC), and the 6th Maintenance Operations Control Center (6 MXG/MXOC), as changes in BWC status occur and flying is adversely affected (as directed by CP Quick Reaction Checklist (QRC) 204).

2.5.2. Notify personnel and organizations identified in MacDill CP QRC 204 when actual wildlife strikes occur regardless of the source (aircrew, maintenance, etc.), then run appropriate checklist.

2.5.3. For after-hours wildlife strikes which cause damage, notify the on-call Flight Safety representative at 6arw.sef@us.af.mil or 6 ARW Chief of Flight Safety as soon as possible

after notification of the incident. If the bird strike caused severe damage, notify the on-call Flight Safety representative at 813-610-1896.

2.6. 6 OG/CC and 927 OG/CC will:

2.6.1. Issue specific guidance to 6 ARW/CP concerning immediate actions required to raise or lower BASH conditions. E.g. UHF radio calls, notification of relevant organizations, etc.

2.6.2. Act as approval authority in accordance with [Paragraph 4.4.2](#) for:

2.6.2.1. All flights during BWC SEVERE.

2.6.2.2. All flights scheduled during BASH Phase II window.

2.6.3. Ensure all MacDill AFB assigned aircrew participate in the BASH program by promptly reporting wildlife-aircraft strike conditions.

2.7. All Department of Defense (DoD) aircrews will:

2.7.1. Report all wildlife strike(s) to air traffic control tower (6 OSS/OSAT) and Command Post as soon as possible.

2.7.2. Report all strikes, and concentrated or unusual wildlife activities as follows:

2.7.2.1. On airfield, report to the 6th Operations Support Squadron, Airfield Management Operations (AMOPs), or tower/ground controller.

2.7.2.2. On departure or arrival, report to controlling agency, tower, or command post, time permitting.

2.7.2.3. In Military Operating Areas (MOA) and warning areas, report to 6 ARW/CP when in radio range or relay by telephone patch when out of range.

2.7.2.4. Report the following information: Call sign, location, altitude, local time of sighting, approximate number of birds, and type of birds (if known).

2.7.2.5. Following a known or suspected wildlife strike, do not take aircraft through the birdbath to ensure that remains are not washed from the aircraft.

2.8. 50th ARS Flight Safety (50 ARS/SEF), 91 ARS Flight Safety (91 ARS/SEF) and 927 ARW Flight Safety (927 ARW/SE) will:

2.8.1. Ensure aircrews report all wildlife strikes to Wing Flight Safety immediately after landing, including off-station. KC-135 crews will report wildlife strikes and complete the AF Form 853, Air Force Wildlife Strike Report, through maintenance debrief.

2.8.2. Ensure aircrews are briefed on seasonal wildlife hazards.

2.8.3. Coordinate with Standardization and Evaluation (6/927 OG/OGV) to ensure current wildlife activity data is available and briefed, as necessary, for each phase of flight. Coordinate with Operations Training (6 OSS/OST) to establish criteria to assist Airfield Management (6 OSS/OSAA), USDA Wildlife Services (6 ARW/SEFB) and Air Traffic Control Tower (6 OSS/OSAT) in declaring a BWC. Assist 6 ARW/SEF in retrieving data for BASH metrics.

2.9. Flight Scheduling (6 ARW/A33 & 927 OSS/OSO) will:

2.9.1. Obtain approval from their group commander for appropriate flights during Phase II in accordance with [Paragraph 4.4.2](#).

2.9.2. Annotate appropriate flights on the cover of the flying schedule during Phase II in accordance with [Paragraph 4.4.2](#).

2.10. USDA Wildlife Services (6 ARW/SEFB) will:

2.10.1. Be the primary executor of ALL wildlife dispersal efforts at MacDill AFB in accordance with their Memorandum of Agreement, Work Plan, and this instruction. They report directly to 6 ARW/SEF who is the OPR for bird/wildlife control activities. The USDA employees will meet with 6 ARW/SEF quarterly to discuss the BASH program for MacDill AFB.

2.10.2. Receive reports of wildlife activity from any source.

2.10.2.1. Declare or downgrade BWC/Bird Watch (BW) level in accordance with [Paragraph 4.2](#) of this publication.

2.10.2.2. Notify 6 OSS/OSAT and 6 OSS/OSAA of BWC changes and wildlife strikes.

2.10.3. Monitor conditions during airfield inspections that might present a wildlife strike hazard. Inspections will normally take place in BASH areas A, B, and C (annotated in [Attachment 2](#), BASH Inspection Areas). Immediate hazards will be reported to 6 OSS/OSAA and 6 ARW/SEF during periods of normal flying operations. 6 OSS/OSAA will then coordinate the BWC with the 6 OSS/OSAT. Remove animal carcasses found/located on the airfield during duty hours. After hours carcass removal will be conducted by 6 OSS/OSAA.

2.10.4. Observe environmental conditions in the runway vicinity that could attract wildlife and report them to 6 ARW/SEF quarterly.

2.10.5. Conduct wildlife dispersal in accordance with this instruction and the Department of The Air Force Instruction (DAFI) 91-212, Bird/Wildlife Aircraft Strike Hazard (BASH) Management Program, utilizing the following mitigation methods when required:

2.10.5.1. Harassment. Make the airfield stressful and inhospitable for unwanted bird species and wildlife through the use of but not limited to pyrotechnics, effigies, lasers, vehicle harassment, and distress calls without damaging any protected wetland habitat.

2.10.5.2. Depredation. Studies show that wildlife becomes accustomed to harassment techniques that are used over a period of time. Therefore, to ensure harassment techniques, remain effective by associating harassment with mortality, it may become necessary to use depredation techniques in accordance with all state and federal rules and regulations.

2.10.5.3. Trapping. Sometimes trapping and removal of an animal may be necessary to alleviate wildlife strike concerns. Traps may include but are not limited to cage traps, foot hold, Sherman traps, goshawk trap, bal-chatri, pole traps, and snares. When trapping, all state and federal rules and regulations will be followed and, if needed, permits will be attained.

2.10.5.4. Use pyrotechnic equipment (Starter pistols for the use of screamers, bangers, whistlers, and range extender rocket. Shell crackers that are used in a 12-gauge shotgun.

CAPA rounds used in a 26.5mm flare gun) and any other bio-acoustic pyrotechnic equipment necessary for wildlife control. Personnel assigned will maintain proficiency on all pyrotechnic devices. All BWC: Prior to pyrotechnic use, WILDLIFE-1/2 will advise tower of intentions via LMR (i.e., MACDILL GROUND, WILDLIFE-1/2 pyro in use at provide location, from time period to time period). If, at the point of notification, tower has any aircraft/operation cleared on five-mile final, aircraft/operation will take priority. Priority will be given to WILDLIFE-1/2 outside of five-mile window. WILDLIFE-1/2 will advise tower upon termination of pyrotechnic use.

2.10.6. Collect data concerning wildlife activity and provide a migratory survey and monthly reports of this activity to 6 ARW/SEF. Wildlife Data Collection. Information on wildlife gathered empirically by 6 ARW agencies, USDA Wildlife Services, U.S. Fish and Wildlife Service, and Florida Fish and Wildlife Conservation Commission such as the following, aids in minimizing exposure to bird activity:

2.10.6.1. Number and type of bird flights.

2.10.6.2. Approximate time of flights.

2.10.6.3. Types of control methods used.

2.10.6.4. Result of those activities.

2.10.6.5. Types and number of animals killed

2.10.6.6. Suggestions for habitat management.

2.10.6.7. Any other information pertinent to MacDill AFB flying safety.

2.10.7. Notify 6 OSS/OSAA before beginning any off-duty period to ensure positive transfer of responsibility for dispersal efforts in accordance with **Paragraph 2.10.7**.

2.11. Airfield Management Operations (6 OSS/OSAA) will:

2.11.1. Post BASH Phase I and II designations, approval authority procedures and contact information in Flight Information Publications AP1.

2.11.2. Declare or downgrade BWC/BW level in accordance with **Paragraph 4.2**. Notify Command Post of BWC changes and wildlife strikes.

2.11.3. Monitor conditions during airfield inspections that might present a wildlife strike hazard. Inspections will normally take place in BASH areas A and B (annotated in **Attachment 2**). BWC will be reported to the 6 ARW/CP during periods of normal flying operations. 6 OSS/OSAA will then coordinate BWC with 6 OSS/OSAT.

2.11.4. Receive reports of wildlife activity from any source.

2.11.5. Record unusual wildlife activity or wildlife-aircraft strike(s) by transient aircrews and report this information to 6 ARW/SEF.

2.11.6. Observe environmental conditions in the runway vicinity that could attract wildlife and report them to 6 ARW/SEF, Commercial 813-828-2480, DSN 968-2480.

2.11.7. Be the OPR for wildlife dispersal when 6 ARW/SEFB is off duty. When 6 ARW/SEFB is on-duty and BWC is elevated to MODERATE or SEVERE, 6 OSS/OSAA

will respond and help 6 ARW/SEFB disperse the wildlife, permitting they are free from other duties.

2.11.8. Conduct wildlife dispersal in accordance with this instruction and DAFI 91-212_AMCSUP, utilizing the following mitigation methods when required: Use pyrotechnic equipment (Starter Pistols for the use of Screammers and Bangers) and any other bio-acoustic pyrotechnic equipment necessary for wildlife control. Personnel assigned will maintain proficiency on all pyrotechnic devices.

2.11.8.1. ALL BWC: Prior to pyrotechnic use, AIRFIELD-MGT will advise tower of intentions (i.e., MACDILL GROUND, AIRFIELD-MGT, pyro in use at provide location, and time period of use). If, at the point of notification, tower has any aircraft/operation cleared on five-mile final, aircraft/operation will take priority. Priority will be given to AIRFIELD-MGT outside of five-mile window. AIRFIELD-MGT will advise tower upon termination of pyrotechnic use.

2.11.8.2. For Pyrotechnic Use: 6 OSS/OSAA will notify AMOPS (via RAMP NET or 813-828-2929/2350), with a time window for BASH operations (i.e., 0800L-1000L). When complete a termination will be given.

2.11.9. Grounds maintenance. 6 OSS/OSAA will ensure the Civil Engineer contractors maintain the grass height at a minimum of 7 inches and a maximum of 14 inches to discourage wildlife activity and habitation.

2.11.10. Habitat modification. Meetings and conversations will continue with local Fish and Wildlife representatives, Base Civil Engineer, Base Agronomist, and Environmental Management to discourage activities that attract wildlife to the local area. These include, but are not limited to, seed crop planting in fields around approach and departure corridors, landfill operations, and industrial operations that create standing water.

2.12. 6/927 OG/OGV will:

2.12.1. Issue specific guidance for 6/927 OG aircrews on procedures to be followed under BWC on the airfield in accordance with Air Mobility Command, Directorate of Operations, Strategic Deterrence, and Nuclear Integration (AMC/A3/10) guidance.

2.12.2. Publish through Base Publication and Forms Office (6 CS/SCXK) BASH considerations and guidance in the MacDill Air Force Base 6th Operations Group Standard Operating Procedure (6 OG SOP) providing 6 OG/927 OG guidance for BWC.

2.12.3. Ensure BASH procedures are covered during aircrew flight briefings as necessary.

2.13. 6 OSS/OSAT will:

2.13.1. Declare a BWC or BW level in accordance with [Paragraph 4.2](#).

2.13.2. Inform Tampa Approach Control and AMOPS of bird activity and changes in the BWC.

2.13.3. Include the BWC in the Airport Terminal Information System (ATIS) broadcast.

2.13.4. Safely provide 6 ARW/SEFB and 6 OSS/OSAA personnel access to the runway during BWC when bird dispersal is necessary.

2.13.5. Ensure mowing operations are not conducted within the CMA during fixed-wing departures and arrivals to Runway 5/23.

2.14. 6/927th Aircraft Maintenance Squadrons (6/927 AMXS) will:

2.14.1. Ensure Wing Safety has the opportunity to investigate any damaging wildlife strikes before clean-up and repair.

2.14.2. Collect and preserve evidence of blood smears and/or non-fleshy remains of wildlife strike(s) until Squadron or Wing Safety assumes responsibility of it in accordance with this instruction.

2.14.3. Ensure any evidence of a wildlife strike found after the crew has departed is forwarded promptly to maintenance debrief. 6/927 AMXS will forward evidence to 6 ARW/SEFB as soon as possible. If maintenance personnel notice a wildlife strike that was not reported by the aircrew, they must notify 6 OSS/OSAA and the Maintenance Operation Center (MOC) immediately. 6/927 AMXS personnel will fill out the AF Form 853, collect snarge and forward to 6 ARW/SEFB.

2.14.4. Determine initial cost estimates and damages caused by the wildlife strike and forward information to 6ARW/SEF.

2.15. 6th Maintenance Group Quality Assurance (6 MXG/MXQ) will:

2.15.1. Forward any evidence of wildlife strikes obtained (including copies of photos taken) to 6 ARW/SEF.

2.15.2. Forward completed AF Form 853 to 6 ARW/SEF at 6arw.sef@us.af.mil as soon as possible following a wildlife strike.

2.16. 6th Civil Engineer (6 CES) will:

2.16.1. Provide an environmental officer to the BHWG to monitor, correct, and advise the group on environmental conditions to improve the BASH program and reduce BASH potential.

2.16.2. Provide devices to eliminate specific habitats and conditions that contribute to wildlife populations in the airfield environment.

2.16.2.1. Control Birds. Control of wildlife populations in structures is provided by a contracted service administered by 6 CES/CEQ. Personnel will remove nuisance wildlife and nesting materials in hangars, warehouses, office buildings, etc. Personnel may also install ceiling netting in buildings, such as hangars, to prevent establishment of perching and nesting birds in the rafters. Perching bird deterrents, such as bird spiders, optical gels, effigies, or predator decoys, will also be installed on structures such as light arrays or towers to prevent perching and nest building. Proper permitting and approval will be required if the nest or birds are a state or federally protected species. All bird species are federally protected under the Migratory Bird Treaty Act, with the exception of non-native invasive species, and take of any birds not listed under the ESA or BGEPA is covered by MacDill AFB's active Depredation at Airports permit renewed with USFWS annually. Take of threatened and endangered species listed under the Endangered Species Act or bald eagles listed under the BGEPA requires additional approval and permitting from USFWS.

2.16.2.2. Control Vegetation and Insects. Control of vegetation and insects is provided by a contracted service administered by Quality Assurance Personnel (6 CES/CEQ). Personnel will be responsible for mowing operations and removing taxiway edge effect. Grass height should be maintained between 7 and 14 inches.

2.16.2.3. Control Water. Operations Flight (6 CES/CEOH) provides control of water. Personnel must obtain authorization from 6 CES/CEIE prior to filling in or draining low spots that accumulate water. Personnel will also align and clean ditches to ensure drainage, and install culverts as needed.

2.16.2.4. Control Waste. The collection and removal of refuse on base is provided by 6 CES/CEQ and a contracted service administered by the Quality Assurance Personnel (6 CES/CEQ). CEQ will ensure waste is collected appropriately and disposed of rapidly.

2.17. The Natural Resources Manager (6 CES/CEIE) and U.S. Fish and Wildlife Service Liaison will:

2.17.1. Coordinate and obtain necessary permits and/or licenses for sensitive environmental issues (nests, wetlands, mangroves, lethal wildlife control, etc.). Appropriate agencies, to include Wing Safety and Public Affairs, will be notified.

2.17.2. Provide data to Wing Safety concerning wildlife migration periods and wildlife activity at least quarterly.

3. Specific Hazards.

3.1. **General:** Specific wildlife hazards and hazard reduction plans for the MacDill AFB area include:

3.2. Turkey vulture (*Cathartes aura*) and black vulture (*Coragyps atratus*).

3.2.1. Hazard: This species is the most serious threat to aircraft operations at MacDill AFB. This dense and heavy species (average 3-4.3 pounds) can be seen soaring in a circular motion in numbers from one to a few hundred over open areas of the flight line. Turkey Vultures soar at altitudes of 50 to 1200 feet, while Black Vultures are normally found at higher altitudes. Turkey vultures are carrion feeders that use their sense of smell to locate food, while black vultures rely on their sight, which is why they soar at higher elevations. This primary threat comes from small to large flocks circling the runway approaches and other open areas of the pattern, especially during mid-morning to late afternoons during the months of October to March.

3.2.2. Hazard Reduction: The airfield and other open areas of the pattern should be closely monitored for their activity and appropriate advisories should be transmitted as required. During the months of October through March, flying during mid-morning to late afternoons should be done only after checking for the presence of flocks in the open areas of the pattern. Every effort should be taken to check the airfield every morning for dead animals. Birds circling over a specific area provide a common visual indication of where a possible dead animal may be found. All dead trees and unneeded manmade structures should be removed from the airfield and surrounding areas. The use of effigies and pyrotechnics such as shell crackers and CAPA rounds can help disperse the flocks.

3.3. Brown Pelican (*Pelecanus occidentalis*) and White Pelican (*Pelecanus erythrorhynchos*).

3.3.1. Hazard: White pelicans are found in Florida during the winter months and are the biggest bird found in the area weighing between 8-30lbs. Species can be seen frequently on the catwalk of the approach lighting for runway 05 and in the drainage ditches near taxiway H. They also fly in flocks from (4-20 birds) in varied formations. Pelicans feed primarily on small fish and dive from altitudes of 30 feet or less. The primary threat occurs when flocks transit the runway approaches and departures in search of food. Brown Pelicans are similar to White Pelicans in their activities, but are smaller, only weighing 7-14lbs, and can be found year-round in Florida.

3.3.2. Hazard Reduction: The approaches should be closely monitored for their activity and appropriate advisories should be transmitted as required. Positive measures such as the removal of vegetation in the drainage ditches must be employed. Constant surveying by aircrews, airfield management, wildlife services and tower personnel is imperative.

3.4. Gulls (*Charadriiformes - Laridae*).

3.4.1. Hazard: This species provides a threat to flight operations in the airfield area. Several subfamilies are permanent residents of the Tampa Bay area as well as a migratory hazard. Gulls are primarily scavengers and gather at garbage dumps, docks, and other lucrative sources of food. They have a relatively slow wing beat that affects their maneuverability and they cannot accurately judge the descent path of an aircraft. This combination leads to most bird strikes occurring on takeoffs and landings. In addition, their movements from roost to food source, to loafing areas constitute hazards.

3.4.2. Hazard Reduction: Habitat modification and control techniques must be devised to effectively reduce the threat.

3.4.2.1. The source of easy food and fresh drinking water near loafing areas within the general airfield area must be reduced to an absolute minimum. During hours immediately following sunrise, large concentrations of gulls will move onto the airfield searching for emergent food sources. Once the search for food is complete, gulls will move to the ramps to loaf. Immediately following heavy rains gulls will migrate back to the airfield in search of new food sources. Sanitary landfill operations must be closely monitored, as they are a major attractor and food source. Every consideration must be given to controlling insects and vegetation both with chemicals and a vigorous mowing program (OPR: 6 CES/CEO).

3.4.2.2. Once the food source is eliminated, action will be taken daily to reduce the attraction of the loafing areas such as clearing ramp space and closely mowing fields. Dispersal procedures, such as pyrotechnics will be used as appropriate. If birds are unresponsive to dispersal techniques, consider the use of depredation. These same techniques will be vigorously employed during BWC MODERATE and SEVERE. (OPR: 6 ARW/SEFB)

3.5. Resident Waterfowl (Hérons, Spoonbills, Egrets, Ibises, Storks, Ducks, and Cormorants).

3.5.1. Hazard: These species are attracted to the drainage ditches on the airfield. The emergent and submerged vegetation provides areas for feeding, nesting, and shelter. Their movement from the shore areas to the drainage ditches on the airfield constitutes the primary hazard. They have a flight characteristic very similar to gulls. Due to the location of their feeding areas, they are primarily found adjacent to the arrival end of runway 05, Mole Hole area, and connecting taxiways.

3.5.2. Hazard Reduction: Removing vegetation and perch areas adjacent to ditches will significantly reduce waterfowl numbers. Pyrotechnics are excellent control techniques and with depredation used as needed. Of note, wood storks (*Mycteria americana*) are federally listed as threatened under the Endangered Species Act. Due to their threat to aviation safety, MacDill AFB was granted permission from USFWS on May 9th, 2016 to harass wood storks on the airfield when necessary.

3.6. Bald Eagles (*Haliaeetus leucocephalus*).

3.6.1. Hazard: Bald Eagles are large birds of prey found near large bodies of water. They weigh between 7-15lbs with females being 25% larger than males. They are scavengers, but feed mostly on fish. They sometimes will loaf on the ground near the runway and fly across the airfield. With two known nests on the airbase, the number of eagles varies between 4-10 at any given time. They do not respond well to pyrotechnics or harassment efforts, which make them difficult to keep off the airfield.

3.6.2. Hazard Reduction: Bald eagles are protected under the Bald and Golden Eagle Protection Act and lethal removal is not allowed. MacDill AFB does have a permit to harass the eagles with pyrotechnics. Nests that pose a threat to human health or safety (e.g., nests on structures such as the airfield rotating navigational beacon) should be removed if possible and will need a separate permit.

3.7. **Other resident species in the immediate area that are being studied as needed include raptors, owls, nighthawks, doves, crows, shorebirds, plovers, pipers, upland species, blackbirds, and starlings.**

4. Operations.

4.1. **Reporting Procedures.** All personnel discovering a wildlife strike will notify 6ARW/SEF, 6ARW/SEFB and Command Post as soon as possible. This is required to ensure that evidence is preserved to identify the bird species involved. The only identification features that should be preserved are blood smears and non-fleshy remains (feathers, feet, wings, or beaks). During non-duty hours, maintenance and AMOPS personnel will arrange for the preservation of evidence until 6ARW/SEFB assumes responsibility for it.

4.1.1. The aircrew involved will complete an AF Form 853 providing as much information as possible concerning the circumstances of the incident. Forms will be turned into Maintenance Debrief or directly turned into 6ARW/SEF.

4.1.2. Maintenance Debrief will transmit all AF Forms 853 to 6 ARW/SEF or 6 ARW/SEFB at 6arw.sef@us.af.mil.

4.1.3. AMOPS personnel will assist transient aircrews in completing AF Forms 853, as applicable.

4.1.4. Command Post will run appropriate checklists and provide a copy of all wildlife strike related reports IAW the DAF Reporting Program Matrix to Wing Safety.

4.1.5. The Wing Safety Office will maintain a historical database of wildlife strike(s) in their area of influence. This information will be compiled and reviewed regularly to determine the current hazard and appropriate operational risk management (ORM) measures.

4.1.6. The Wing Safety Office will up-channel wildlife strike data in accordance with DAFI 91-204, Safety Investigations and Reports.

4.1.7. This operation establishes procedures to be used for the immediate exchange of information between ground agencies and aircrews concerning the existence and location of birds that could pose a hazard to flight.

4.2. Bird Watch Condition. The following terminology will be used for rapid communications to disseminate bird activity and implement unit operational procedures. Bird locations should be given with condition code (i.e., Condition Severe, runway 05, approach end). Note: It is apparent that some subjectivity may be involved in declaring a BWC. Further, it cannot be overstressed that the use of numbers (5 to 15 large birds, etc.) is intended as a guide and a myriad of factors must be assessed when establishing a BWC. The declaring authority will utilize his/her expertise and best judgment to make the decision. If doubt exists as to the severity of the hazard, the declaration will be made for the worst case.

4.2.1. BWC LOW: Normal bird activity (fewer than 5 large birds or fewer than 15 small birds) on and above the airfield with a low probability of hazard. No flight restrictions apply.

4.2.2. BWC MODERATE: Concentrations of 5 to 15 large birds (waterfowl, raptors, gulls, etc.) or 15 to 30 small birds (terns, swallows, etc.) observable on locations that represent a probable hazard to safe flying operations. Flight restrictions apply from [Paragraph 4.4.2](#).

4.2.3. BWC SEVERE: Heavy concentrations of birds (more than 15 large birds or 30 small birds) on or above the runway, taxiways, in field areas, or departures or arrival routes. Flight restrictions apply from [Paragraph 4.4.2](#).

4.3. Authority. The authority to declare a BWC is vested with 6 OSS/OSAA, 6 ARW/SEFB, 6 ARW/SEF, 927 ARW/SEF and 6 OSS/OSAT. Aircrews, Aircraft Maintenance, Security Forces, and Wildlife Services personnel will inform 6 OSS/OSAA, 6 OSS/OSAT, or Command Post if significant bird activity is observed. When 6 OSS/OSAA, 6 ARW/SEFB, or 6 OSS/OSAT determines that bird dispersal is required, 6 ARW/SEFB and/or AMOPS will respond immediately completing all documentation after dispersal. Downgrading: Once BWC MODERATE or SEVERE has been declared, only 6 ARW/SEFB, 6 OSS/OSAA, 927 OG/CC, and 6 OG/CC (or designated representative) may cancel or downgrade to a condition commensurate with the latest information.

4.4. BWC Phase Operating Restrictions.

4.4.1. Phase Periods.

4.4.1.1. Phase I Operations. (Typically, 1 March-31 October): No restrictions. Migratory Periods: Fall (15 September-31 October) and spring (15 March-15 May) migration periods will be mitigated by increased BASH vigilance and response.

Wildlife movement occurs all day long but is likely to increase during the hour before and after sunrise and sunset. The BWC will be declared as conditions warrant and will be based on the location, number, and size of the wildlife.

4.4.1.2. Phase II Operations (Typically 1 November-28 February): During Phase II operations, particular attention should be given to the hour before and after sunrise and sunset due to bird feeding times and during mid-day hours from 0930-1600 due to the soaring bird threat. The declaration of a BWC will carry the operational limitations associated with the BWC. Crews will ensure vigilance and proper coordination prior to operations in a declared BWC window. NOTE: Phase II Operations is a scheduling requirement. Wing schedulers and the 618th Air Operations Center (618 AOC) shall make every effort to not schedule takeoffs and landings from one hour before to one hour after sunrise and sunset during the Phase II period. If a mission in execution returns during the BASH window, they will make their approach based on the current BWC.

4.4.2. Flight Restrictions. The following flight restrictions for airfield operations will be imposed during BWC MODERATE and SEVERE.

4.4.2.1. MODERATE: Requires increased vigilance by all agencies and extra caution by aircrews.

4.4.2.1.1. Initial takeoffs and final landings allowed only when departure and arrival routes avoid identified wildlife activity, ultimately at the discretion of the aircrew.

4.4.2.1.2. Local Instrument Flight Rules/ Visual Flight Rules (IFR/VFR) traffic pattern activity ceases. For approval aircrews will coordinate with tower, and command post to contact 6 OG/CC or 927 OG/CC.

4.4.2.2. SEVERE: Requires total vigilance by all agencies and extreme caution by aircrews. Takeoffs and landings are prohibited without 6 OG/CC or 927 OG/CC (or higher) approval. For approval aircrews will coordinate with tower, and command post to contact 6 OG/CC or 927 OG/CC.

5. Depredation. Personnel performing depredation must be trained and follow all prescribed procedures to ensure safe operations. All other methods of dispersal must be exhausted prior to commencing depredation operations.

5.1. **Location:** Depredation operations will be conducted only in designated areas. The area of operation is the Airfield Operations Area. Depredation by USDA will be on the airfield or into the bay west of the approach of Runway 5, and all projectiles will not travel onto buildings or across roads off the airfield. Additionally, when depredation must be used outside the airfield Security Forces will be notified.

5.2. **Requirements:** Personnel will attend firearm and bird identification training prior to being authorized to perform depredation operations. Weapons safety is paramount and must always be adhered to. Any observed safety violation or depredation of a protected species would result in immediate revocation of depredation privileges.

5.3. **Authorization:** Only qualified personnel from 6 ARW/SEFB, 6 OSS/OSAA and Wing Safety will be authorized to perform depredation operations on MacDill AFB. The names of qualified personnel with current training dates will be tracked on the depredation permit.

5.4. **Procedures:** The following procedures have been set up to comply with regulatory standards and to provide safe operations. By following these procedures, the possibility of a mishap or depredation of a protected species will be greatly reduced.

5.4.1. Prior to beginning depredation operations:

5.4.1.1. 6 ARW/SEFB (USDA), will: Contact the 6 OSS/OSAT (Commercial 813-828-4822) or via LMR and provide notification on the location of depredation and a time window.

5.4.1.2. Upon approval of depredation from the 6 OSS/OSAT, USDA can conduct depredation operations. USDA must maintain LMR radio contact with tower. If depredation is outside of the airfield, Security Forces must be notified first.

5.4.1.3. 6 OSS/OSAA will: Notify Security Forces (Commercial 813-828-3322) and 6 OSS/OSAT with depredation information. AMOPS will log in events log.

5.4.2. The authorized individual conducting depredation operations will notify AMOPS at the completion of depredation operations. AMOPS will notify Security Forces after all depredation operations are complete.

5.4.2.1. Individuals authorized to perform depredation must carry a copy of the weapons and depredation permit during operations to comply with federal regulations.

5.4.2.2. Personnel will wear appropriate eye and ear protection while performing depredation operations.

5.4.2.3. Threatened and Endangered species both state and federal must not be taken for any reason, unless a proper permit has been attained. This does not include state listed species of special concern. If you are unsure of the species, do not depredate it. If a threatened or endangered species is taken accidentally, report it immediately to 6 AMW/SE, USDA Wildlife Services, and 6 CES/CEIE. Do not dispose of the remains until instructed to do so.

5.4.2.4. The use of blinds, pits, or other means of concealment, decoys, calls, or other devices used to lure or entice migratory birds is strictly prohibited and will not be utilized.

5.4.2.5. Taking of wildlife on the airfield by non-USDA personnel will be by a 12-gauge shot gun or .22 pellet rifle. USDA may also use a 12-gauge shot gun, .22-caliber pistol, .22-caliber rifle, 17 HMR rifle, and .22-250 caliber rifle. All shotgun ammo used for migratory birds will be non-lead. Storage and handling of explosives must be coordinated through 6 ARW/SEW.

5.4.2.6. Personnel must be in radio contact with tower while depredation operations are in progress. All depredation actions must cease immediately upon any aircraft activity within 1000 yards on the ground or upon any aircraft reaching 5 mile final. Tower will notify USDA when depredation operations may resume.

- 5.4.2.7. Personnel conducting depredation must be aware of their surroundings. A spotter should be used to increase vigilance during operations when available. Do not shoot directly towards any personnel at any time. Additionally, do not shoot towards buildings or airfield equipment if it is located within the operational range of the firearm being used. Failure to comply could result in death, injury, or damage to equipment.
- 5.4.2.8. Personnel will position themselves between the runway and the birds when able during depredation to provide the maximum dispersal effectiveness.
- 5.4.3. Tracking and Disposal: The numbers of birds taken is a critical factor in conservation and must be tracked accordingly. State and federal agencies use these numbers to determine number of birds taken in a region and may limit the number allowed to prevent over-depredating the species. Proper disposal is an equally important issue. Improper disposal has the possibility of spreading disease as well as acting as an attractor to other birds or other scavengers.
- 5.4.3.1. Tracking information will be separated by 1) the date birds were taken, 2) the species of the birds taken, and 3) the number of each species. The data will then be sent to 6ARW/SEFB for input into the Management Information System (MIS), managed by USDA. Data extraction will be completed quarterly and sent to 6 ARW/SEF. Flight Safety will then compile the total numbers and report annually to 6 CES/CEIE.
- 5.4.3.2. Wildlife that had been depredated must be disposed of by burial, or the use of double bagging method. Designated disposal dumpster has been identified by 6 CES. If buried, carcasses must be buried in the wooded areas off the airfield and covered by at least 6 inches of dirt when level with ground. Use a new burial location each time to minimize any effects at any single location. Periodically, review recent burial sites to see if other animals have disturbed them. If there is evidence of this, increase the amount of dirt covering the carcasses to at least 12 inches on subsequent burials.
- 5.4.3.3. Unusual Bird Die-offs. If large-scale wild bird die-offs are discovered on the airfield or installation property, carcasses should be reported to USDA and the Florida Fish and Wildlife Conservation Commission (FWC) wildlife hotline for further guidance. Unusual mortality events may indicate a new outbreak of an avian-borne disease, such as avian influenza. If fresh enough, carcasses can be preserved for testing. When handling carcasses, gloves must be worn and any items potentially contacting the carcasses need to be disinfected. Bird groups particularly susceptible to disease include waterfowl, gulls, bald eagles, and vultures; species should be noted when reporting.

6. Non-MacDill AFB Located Units. Non-MacDill located units will notify tower of any bird strikes that occur in the MacDill AFB traffic pattern. Their respective Safety office will coordinate with the 6 ARW/SEF or 6 ARW/SEFB for coordination of remains collection and investigation as necessary.

EDWARD V. SZCZEPANIK, Col, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

DAFI 91-202, *The Department of The Air Force (DAF) Mishap Prevention Program, 12 March 2020*

AFI 91-202_AMCSUP, *The US Air Force Mishap Prevention Program, 14 October 2020 DAFI 91-204, Safety Investigations and Reports, 10 March 2021*

DAFI 91-212, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Program, 13 April 2023*

DAFI 91-212_AMCSUP, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Program, 16 August 2023*

AFI 33-322, *Records Management and Information Governance Program, 28 July 2021 AFI 35-101, Public Affairs Operations, 20 November 2020*

DODM 5400.07_AFMAN 33-302, *Freedom of Information Act Program, 27 Apr 2018*

Prescribed Forms

None

Adopted Forms

DAF Form 847, *Recommendation for Change of Publication*

AF Form 853, *Air Force Wildlife Strike Report*

Abbreviations and Acronyms

6 ARW—6th Air Refueling Wing

6 AMXS/MXAS—6th Aircraft Maintenance Squadron, Debrief Section

6 CES—6th Civil Engineer Squadron

6 CS/SCXK—6th Communication Squadron, Base Freedom of Information Office

6 MXG/MXOC—6th Maintenance Operations Control Center

6 MXG/MXQ—6th Maintenance Group, Quality Assurance

6 OG—6th Operations Group

6 OSS—6th Operations Support Squadron,

50 ARS—50th Air Refueling Squadron

63 ARS—63rd Air Refueling Squadron

91 ARS—91st Air Refueling Squadron

927 ARW—927th Air Refueling Wing

LMR—Land Mobile Radio

927 OG—927th Operations Group

618 AOC—618th Air Operations Center

AF—Air Force

AFB—Air Force Base **AFI**—Air Force Instruction

AFMAN—Air Force Manual

AFSAS—Air Force Safety Automated System

AFSC—Air Force Safety Center

AMC/A3—Air Mobility Command, Directorate of Operations

AMOPS—Airfield Operations Flight

ATIS—Airport Terminal Information System

BASH—Bird Aircraft Strike Hazard

BHWG—Bird Hazard Working Group

BW—Bird Watch

BWC—Bird Watch Condition

CC—Commander

CEOH—Equipment Flight

CEQ—Quality Assurance

CEIE—Civil Engineering Installation Environmental Management

CEV—Civil Engineering Management

CP—Command Post

CV—Vice Commander

CZ—Clear Zone

DNA—Deoxyribonucleic Acid

DoD—Department of Defense

FAX—Facsimile

IFR—Instrument Flight Rules

MOA—Military Operating Area

OC—Operations Coordinator

OST—Operations Training

OGV—Standardization and Evaluation

OPR—Office of Primary Responsibility

ORM—Operational Risk Management **OSAA**—Airfield Management **OSAT**—Air Traffic Control Tower **OSOS**—Flight Scheduling

PA—Public Affairs

QRC—Quick Reaction Checklist RDS—Records Disposition Schedule SEFB—Wildlife Control Contractor SEF—Flight Safety

SE—Wing Safety

TDY—Temporary Duty

USDA—United States Department of Agriculture

VFR—Visual Flight Rules

Terms

BWC LOW—Normal bird activity (fewer than 5 large birds or fewer than 15 small birds) on and above the airfield with a low probability of hazard. No flight restrictions apply.

BWC MODERATE—Concentrations of 5 to 15 large birds (waterfowl, raptors, gulls, etc.) or 15 to 30 small birds (terns, swallows, etc.) observable on locations that represent a probable hazard to safe flying operations.

BWC SEVERE—Heavy concentrations of birds (more than 15 large birds or 30 small birds) on or above the runway, taxiways, in field areas, or departures or arrival routes.

SNARGE—The remains of a bird after it has collided with an aircraft (in a bird strike), especially a turbine engine.

Attachment 2

BASH INSPECTION AND HABITATION AREAS

A2.1. Area A: This is the most critical area for aircraft operations and is defined as the runway area from the clear zone (CZ) of Runway 05 through the CZ of Runway 23, to include the area 1500 feet to the left and right of the runway. The 1500-foot area on the tower side of the runway extends to the tree line. Doves and Meadowlark habituate the runway, shoulders, and surrounding grass. Meadowlark spook easily. Doves utilize camouflage and delay movement from approaching harassment until the threat of danger is imminent, then they react suddenly. Wading birds, to include Cattle Egret, Great Egret, and White Ibis also habituate Area A. Great Egret and White Ibis forge in flooded grass, which includes the wetlands in front of the Tower and ruts created by mowers. Cattle Egrets flock in large groups of 10-50 and follow the mowers. Gulls transit over the runway and follow mowers. Shorebirds, including Killdeer and Plovers habituate south of the BAK-12 to approach end of RWY 05. Occasionally Ospreys feed on fish at the overrun and approach end of RWY 05.

A2.2. Area B: This area is defined as the remainder of the airfield and includes all taxiways, parking apron, refueling pits, infield areas, departure and arrival routes, and all remaining area on the airfield. Active bird removal from these areas is paramount when bird activity is low in Area A. Wading birds to include Cattle Egrets, Great Egrets, Snowy Egrets, White Ibis, Great Blue Heron, Little Blue Heron, and Tri Color Heron all habituate wetlands and ditches in Area B. Additionally, Gulls and Shorebirds, to include Killdeer and Plovers habituate the ramps and Doves are commonly found on the taxiways. Burrowing owls habituate the high dry areas near ditches and pose little threat to aircraft operations. If an area is identified where burrowing owls do habituate, AMOPS or SE will notify the base mowers to remain outside of the area.

A2.3. Area C: This area includes all hangars and buildings on the airfield perimeter. BASH personnel will work in cooperation with the building owning agencies to help prevent a continual bird presence in and around these areas. NOTE: For large numbers of birds, BASH activities will be prioritized based on area. It is important to emphasize that, although birds may have moved away from a critical area (Area A) into a less critical area (B or C), continued vigilance is required. Birds can quickly nest in certain areas, so continual harassment is needed. Great Egrets, Snowy Egrets, White Ibis, Great Blue Heron, Little Blue Heron, Tri Color Heron, Anhinga and Cormorants, and mixed Waterfowl wade in the dry and wet ponds located near the Medical Clinic. A nominal amount of birds habituate Area C.

Figure A2.1. BASH Inspection Areas.

