

**BY ORDER OF THE COMMANDER  
MACDILL AIR FORCE BASE**

**MACDILL AIR FORCE BASE  
INSTRUCTION 91-212**



**26 JUNE 2015**

**Safety**

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

**COMPLIANCE WITH THIS PUBLICATION IS MANDATORY**

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This instruction implements Air Force Instruction (AFI) 91-202, *US Air Force Mishap Prevention Program* and AFPAM 91-212, *Bird/Wildlife Aircraft Strike Hazard Management Techniques*. It applies to the 6th Air Mobility Wing (6 AMW), 927th Air Refueling Wing (927 ARW), tenant units, and temporary duty (TDY) organizations on MacDill Air Force Base (AFB). This instruction provides a base program to minimize aircraft exposure to potentially hazardous wildlife strikes. The 6th Air Mobility Wing, Flight Safety Office (6 AMW/SEF), is the Office of Primary Responsibility (OPR) for this instruction and will complete an annual review by 1 March. The Commander, 6th Air Mobility Wing (6 AMW/CC), is responsible for implementation of this instruction. All records created as a result of processes prescribed in this publication will be maintained in accordance with Air Force Manual (AFMAN) 36-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located at [https://www.my.af.mil/afirms/afirms/afirms/rds/rds\\_series.cfm](https://www.my.af.mil/afirms/afirms/afirms/rds/rds_series.cfm). 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.

**SUMMARY OF CHANGES**

This document is substantially revised and must be completely reviewed. Major changes include adding the United States Department of Agriculture (USDA) as the primary executor of all wildlife dispersal efforts at MacDill Air Force Base. Additionally, the roles and responsibilities

of the USDA while performing wildlife services at MacDill Air Force Base are defined. Furthermore, the roles of 6 OSS/OSAA has changed in paragraph 2.10.

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**1. Overview/Background:** The MacDill Air Force Base (AFB) Bird 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. There is no way to eliminate BASH and this instruction establishes procedures to mitigate risks.

**2. Roles and Responsibilities.**

2.1. The Vice Commander (6 AMW/CV) 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 AMW/SE) will:

2.2.1. Facilitate BHWG meetings.

2.2.2. Prepare and maintain the basic plan and changes to this document at least annually.

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

2.2.4. Establish procedures for reporting and recording all bird strikes at MacDill AFB involving 6 AMW, 927 ARW, and tenant aircraft.

2.2.5. Collect information on migrations of local and seasonal bird activities through 6<sup>th</sup> Civil Engineer Squadron, Environmental (6 CES/CEV), local, state, and private wildlife authorities.

2.2.6. Collect bird 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.

2.2.7. Coordinate and establish procedures for disseminating and terminating BIRD WATCH Conditions (BWC).

2.2.8. 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 bird remains are taken from the aircraft or airfield after a bird 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, 10<sup>th</sup> & Constitution Ave NW, Washington D.C. 20560.

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

2.2.10. Hold quarterly meetings with Airfield Management and BASH personnel to advise and request changes to BASH policies and procedures.

2.2.11. Perform duties as the funding acceptor for Wide Area Work Flow.

2.3. Public Affairs (6 AMW/PA) will:

2.3.1. Be the releasing authority on any information to news media representatives, the MacDill AFB community, and/or general public.

2.3.2. Respond to any queries from news media representatives or general public concerning bird strikes, major changes in operations, or pending projects to control bird populations or reduce potentially hazardous bird strikes.

2.4. The Command Post (6 AMW/CP) will:

2.4.1. Notify the 6<sup>th</sup> Operations Group Commander (6 OG/CC), 91<sup>st</sup> Air Refueling Squadron Director of Operations (91 ARS/DO), 63<sup>rd</sup> Air Refueling Squadron Operations Coordinator (63 ARS/OC), 310<sup>th</sup> Airlift Squadron Operations Center (310 AS/SOC), 6<sup>th</sup> Air Mobility Wing Safety (6 AMW/SE), 6<sup>th</sup> Maintenance Operations (6 MXG/MXO), and the 6<sup>th</sup> 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).

2.4.2. Notify personnel and organizations identified in MacDill CP QRC 205 when actual bird-aircraft strikes occur regardless of the source (aircrew, maintenance, etc.), then run appropriate checklist.

2.4.3. For after-hours bird strikes, notify the on-call Flight Safety representative or 6 AMW Chief of Flight Safety as soon as possible after notification of the incident.

2.5. 6 OG/CC and 927 OG/CC will:

2.5.1. Issue specific guidance to 6 AMW/CP concerning actions required to implement the BASH Plan.

2.5.2. Act as approval authority in accordance with paragraph 4.4.2. for:

2.5.2.1. All flights during BWC SEVERE.

2.5.2.2. All flights scheduled during BASH Phase II window.

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

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

2.6.1. Report all bird-aircraft strike(s) to air traffic control tower (OSS/OSAT) and Command Post as soon as possible.

2.6.1.1. Report all strikes and concentrated or unusual bird activities as follows:

2.6.1.1.1. On airfield, report to the 6th Operations Support Squadron, Airfield Manager (6 OSS/OSAA), or tower/ground controller.

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

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

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

2.6.1.1.5. Following a known or suspected bird strike; **do not take aircraft through the birdbath** to ensure that remains are not washed from the aircraft.

2.7. 91 ARS Flight Safety (91 ARS/SEF), 310 AS Flight Safety (310 AS/SEF), and 927 ARW Flight Safety (927 ARW/SE) will:

2.7.1. Ensure aircrews report all bird-aircraft and wildlife strikes to Wing Flight Safety immediately after landing, including off-station. KC-135 crews will report bird strikes and complete the AF Form 853, *Air Force Wildlife Strike Report*, through maintenance debrief. Individual C-37 crews are responsible for completing the AF Form 853 since they do not perform maintenance debriefs through the 6<sup>th</sup> Aircraft Maintenance Squadron, Debrief Section (6 AMXS/ MXAS). 6 AMXS/MXAS or C-37 aircrews will facsimile (FAX) completed AF Form 853 to the Wing Safety Office, Commercial 813-828-6794, DSN 968-6794, and the 6<sup>th</sup> Maintenance Group, Quality Assurance Office (6 MXG/MXQ), Commercial 813-828-2126, DSN 968-2126, as soon as possible after the bird-aircraft strike(s).

2.7.2. Ensure aircrews are briefed on seasonal bird hazards.

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

2.8. Flight Scheduling (6 OSS/OSOS & 927 OSS/OSO) will:

2.8.1. Obtain approval from their group commander for appropriate flights during Phase II in accordance with paragraph 4.4.2.

2.8.2. Annotate appropriate flights on the cover of the flying schedule during Phase II in accordance with paragraph 4.4.2.

2.9. USDA Wildlife Services (6 AMW/SEFB) will:

2.9.1. Will be the primary executor of ALL wildlife dispersal efforts at MacDill AFB in accordance with their Memorandum of Agreement (MOA) and Workplan. They report directly to 6 AMW/SEF who is the OPR for wildlife control activities. The USDA employees will meet with 6 AMW/SEF periodically to discuss the BASH program for MacDill AFB.

2.9.2. Receive reports of bird activity from any source.

2.9.2.1. Declare or downgrade BWC/BW level in accordance with paragraph 4.2.

2.9.2.2. Notify 6 OSS/OSAT and 6 OSS/OSAA of BWC changes and bird strikes.

2.9.3. Monitor conditions during airfield inspections that might present a bird 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 AMW/SEF during periods of normal flying operations. Airfield Management Operations will then coordinate the BWC with the 6 OSS/OSAT.

2.9.3.1. Remove animal carcasses found/located on the airfield during duty hours. All after hour's carcass removal will be conducted by 6 OSS/OSAA.

2.9.4. Observe environmental conditions in the runway vicinity that could attract birds and report them to 6 AMW/SEF quarterly.

2.9.5. Conduct bird dispersal in accordance with this instruction and Air Force Pamphlet (AFPAM) 91-212, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques*, utilizing the following mitigation methods when required:

2.9.5.1. 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.

2.9.5.2. Depredation. Studies show that wildlife becomes accustomed to harassment techniques that are used over a period of time. Therefore, in order to ensure harassment techniques remain effective by associating harassment with mortality, it may become necessary to use depredation techniques.

2.9.5.3. Trapping. Sometimes trapping and removal of an animal may be necessary to alleviate wildlife strike concerns. Traps may include but 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.

2.9.5.4. Use pyrotechnic equipment (Starter pistols for the use of screamers and bangers. 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 bird control. Personnel assigned will maintain proficiency on all pyrotechnic devices.

2.9.5.4.1. BWC LOW: Prior to pyrotechnic use, WILDLIFE-1 or WILDLIFE-2 will request permission to use pyrotechnics on the airfield (i.e., MACDILL GROUND, WILDLIFE-1/2, request permission to use pyro at provide location).

Upon termination of pyrotechnic use, WILDLIFE-1/2 will advise tower (i.e., MACDILL GROUND, WILDLIFE-1/2 terminate pyro use at *provide location*).

2.9.5.4.2. BWC MODERATE/SEVERE: Prior to pyrotechnic use, WILDLIFE-1/2 will **advise** tower of intentions (i.e., MACDILL GROUND, WILDLIFE-1/2 pyro in use at *provide location*). 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.

2.9.6. Collect data concerning bird activity and provide a migratory survey and monthly reports of this activity to 6 AMW/SE.

2.9.6.1. Bird Data Collection. Information on birds gathered empirically by 6 AMW agencies and Florida Fish and Wildlife, such as the following, aids in minimizing exposure to bird activity:

2.9.6.1.1. Number and type of bird flights.

2.9.6.1.2. Approximate time of flights.

2.9.6.1.3. Types of control methods used.

2.9.6.1.4. Result of those activities.

2.9.6.1.5. Types and number of animals killed.

2.9.6.1.6. Suggestions for habitat management.

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

2.9.7. 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.

2.10. 6 OSS/OSAA will:

2.10.1. Declare or downgrade BWC/BW level in accordance with paragraph 4.2.

2.10.1.1. Notify Command Post of BWC changes and bird strikes.

2.10.2. Monitor conditions during airfield inspections that might present a bird strike hazard. Inspections will normally take place in BASH areas A and B (annotated in [Attachment 2](#)). Immediate hazards will be reported to the 6 AMW/CP during periods of normal flying operations. Airfield Management Operations will then coordinate BWC with 6 OSS/OSAT.

2.10.3. Receive reports of bird activity from any source.

2.10.4. Issue airfield BWC advisories as declared. Also, issue a local Notice to Airmen (NOTAM) when a BW level is activated to include time window for the level, if available, and reason (i.e., mowing operations, migration period, sunrise/sunset activity, etc.).

2.10.5. Record unusual bird activity or bird-aircraft strike(s) by transient aircrews and report this information to 6 AMW/SEF.

2.10.6. Observe environmental conditions in the runway vicinity that could attract birds and report them to 6 AMW/SEF, Commercial 813-828-2380, DSN 968-2380

2.10.7. Be the OPR for bird dispersal when 6 AMW/SEFB is not on duty. Conduct bird dispersal in accordance with this instruction and AFPAM 91-212, utilizing the following mitigation methods when required:

2.10.7.1. Use pyrotechnic equipment (pistols with 12 gauge insert, airburst shells, and 12 gauge scare cartridges) and any other bio-acoustic pyrotechnic equipment necessary for bird control. Personnel assigned will maintain proficiency on all pyrotechnic devices.

2.10.7.1.1. BWC LOW: Prior to pyrotechnic use, AIRFIELD-1 will request permission to use pyrotechnics on the airfield (i.e., MACDILL GROUND, AIRFIELD-1, request permission to use pyro at provide location). Upon termination of pyrotechnic use, AIRFIELD-1 will advise tower (i.e., MACDILL GROUND, AIRFIELD-1 terminate pyro use at provide location).

2.10.7.1.2. BWC MODERATE/SEVERE: Prior to pyrotechnic use, AIRFIELD-1 will **advise** tower of intentions (i.e., MACDILL GROUND, AIRFIELD-1, pyro in use at provide location). 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 outside of five mile window. AIRFIELD-1 will advise tower upon termination of pyrotechnic use.

2.10.7.1.2.1. When 6 AMW/SEFB is on duty and BWC is elevated to MODERATE or SEVERE, 6 OSS/OSAA will respond to the airfield and help WILDLIFE-1 disperse the birds, permitting they are free from other duties.

2.10.7.1.3. For Pyrotechnic Use: 6 AMW/SEFB (USDA) or 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.

2.10.7.1.4. 6 OSS/OSAA will: Notify Security Forces (BDOC) of pyrotechnic use and termination.

2.10.7.2. Grounds maintenance. Airfield Management Operations will ensure the Civil Engineer contractors maintain the grass height at a minimum of 7 inches and a maximum of 14 inches to discourage bird activity and habitation.

2.10.7.3. 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 birds 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.

2.10.7.4. Depredation. Studies show that wildlife becomes accustomed to harassment techniques that are used over a period of time. Therefore, in order to ensure harassment techniques remain effective by associating harassment with mortality, it

may become necessary to use depredation techniques. Refer to section 5 for depredation techniques.

2.10.7.5. Collect data concerning bird activity and provide a migratory survey and monthly reports of this activity to 6 AMW/SEF.

2.10.7.5.1. Bird Data Collection. Information on birds gathered empirically by MacDill AFB agencies and Florida Fish and Wildlife, such as the following, aids in minimizing exposure to bird activity:

2.10.7.5.1.1. Peak concentration by species of bird.

2.10.7.5.1.2. Radar and visual sighting by time of day.

2.10.7.5.1.3. Bird aircraft strike incidents at MacDill AFB.

2.10.7.5.1.4. Weather conditions during increased bird activity sightings.

2.10.7.5.1.5. Bird flying activity (soaring, transitioning, feeding, etc.).

2.11. 6/927 OG/OGT will:

2.11.1. Issue specific guidance for 6/927 aircrews on procedures to be followed under BWC on the airfield in accordance with Air Mobility Command, Directorate of Operations (AMC/A3) guidance.

2.11.2. Publish BASH considerations and guidance in AFI 11-2KC-135V3\_MACDILLAFBSUP, *C/KC-135 Operations Procedures*, for BWC.

2.11.3. Coordinate with Standardization and Evaluation (6/927 OG/OGV) to ensure BASH procedures are covered during aircrew flight briefings as necessary.

2.12. 6 OSS/OSAT will:

2.12.1. Declare a BWC or BW level in accordance with paragraph 4.2.

2.12.2. Inform Tampa Approach Control and Airfield Management Operations of bird activity and changes in the BWC.

2.12.3. Include the BIRD WATCH information in the Airport Terminal Information System (ATIS) broadcast.

2.12.4. Safely provide 6 AMW/SEFB and 6 OSS/OSAA personnel access to the runway during BIRDWATCH conditions when bird dispersal is necessary.

2.12.5. Notify mowers operating in BASH Inspection Areas A and B (see Attachment 2) five minutes prior to any departures or arrivals.

2.12.5.1. During departures and arrivals, direct mowers to continue to operate outside of the CMA (BASH Inspection Area A, Attachment 2) at a distance of no less than 200' from the runway edge. It has been found that when the mowers stop, the birds' food source ceases to exist and the birds disperse in different directions; often times toward the runway environment. Keeping the mowers moving helps keep the birds actively feeding in the vicinity of the mowers and away from the runway.

2.12.5.2. If aircraft plan to conduct multiple approaches, tower will advise mowers of approximate delay due to pattern work. If an extended delay is expected, mowers will

concentrate their efforts on parts of the airfield outside of 200 feet from the runway and away from the arrival/departure corridors.

2.13. 6/927 Aircraft Maintenance Squadrons (6/927 AMXS) will:

2.13.1. Ensure Wing Safety has the opportunity to investigate any damaging bird strikes before clean up and repair.

2.13.2. Make arrangements to gather and preserve evidence of blood smears and/or non-fleshy remains of bird strike(s) until Squadron or Wing Safety assumes responsibility of it in accordance with this instruction.

2.13.3. Ensure any evidence of a bird-aircraft strike found after the crew has departed is forwarded promptly to maintenance debrief. 6/927 AMXS will forward evidence to 6 AMW/SEF as soon as possible. If maintenance personnel notice a bird strike that was not reported by the aircrew, they must notify the Maintenance Operation Center immediately and fill out Maintenance Found BASH sheet to be forwarded to 6 AMW/SEF.

2.13.4. Determine initial cost estimates and damages caused by the bird strike and forward information to Wing Safety.

2.14. 6<sup>th</sup> Maintenance Group Quality Assurance (6 MXG/MXQ) will:

2.14.1. Ensure C-37aircrew(s) and/or maintenance personnel complete an AF Form 853 when evidence indicates bird-aircraft strike(s) have occurred, and maintain a copy for records.

2.14.2. Forward any evidence of bird-aircraft strikes obtained (including copies of photos taken) to 6 AMW/SEF.

2.14.3. Forward completed AF Form 853 to 6 AMW/SEF at [6amw.sef@us.af.mil](mailto:6amw.sef@us.af.mil) (preferred method) or FAX Commercial 813-828-6794, DSN 968-6794, and to the Quality Assurance Office (6 MXG/MXQ) as soon as possible.

2.15. 6<sup>th</sup> Civil Engineer (6 CES) will:

2.15.1. 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.

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

2.15.2.1. Control Birds. Control of bird populations in structures is provided by a contracted service administered by 6 CES/CEV. Personnel will remove nuisance birds and nesting materials in hangars, warehouses, office buildings, etc. Proper permitting and approval will be required if the nest or birds are a state or federally protected species.

2.15.2.2. 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. Contractor will coordinate with Flight Scheduling to ensure

mowing will be conducted during periods of non-flying operations. Grass height should be maintained between 7 and 14 inches.

2.15.2.3. Control Water. Control of water is provided by Equipment Flight (6 CES/CEOH). Personnel must obtain authorization from 6 CES/CEVN 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.

2.15.2.4. 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 Evaluation Flight (6 CES/CEQ). CEQ will ensure waste is collected appropriately and disposed of rapidly.

2.16. The Natural Resources Manager (6 CES/CEV) will:

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

2.16.2. Provide data to Wing Safety concerning bird migration periods and bird activity at least quarterly.

### 3. Specific Hazards.

3.1. General: Specific bird 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 04 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, but 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, 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 bay area as well as a migratory hazard. Gulls are primarily scavengers and gather at garbage dumps, ducts, 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. 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 through the use of 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 AMW/SEFB)

#### 3.5. Resident Waterfowl (Herons, 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 04, 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.

### 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 should be removed if able 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 bird-aircraft strike will notify Wing Safety and Command Post as soon as possible. This is required to ensure that evidence is preserved in order 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 Airfield Management Operations personnel will make arrangements for the preservation of evidence until Wing Safety 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 in to Maintenance Debrief or directly turned in to Wing Safety.

4.1.2. Maintenance Debrief will transmit all AF Forms 853 to 6 AMW/SEF at [6amw.sef@us.af.mil](mailto:6amw.sef@us.af.mil) (preferred method) or FAX at Commercial 813-828-6794, DSN 968-6794.

4.1.3. Airfield Management Operations 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 bird strike related Operational Report 3 (OPREP-3) reports to Wing Safety.

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

4.1.6. The Wing Safety Office will up-channel bird-aircraft strike data in accordance with AFI 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 04, 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 on and above the airfield with a low probability of hazard. No flight restrictions apply.

4.2.2. **BWC MODERATE**: Concentrations of 5 to 10 large birds (waterfowl, raptors, gulls, etc.) or 10 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 10 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 AMW/SEFB, 6 AMW/SEF, 927 ARW/SEF or 6 OSS/OSAT. Aircrews, Aircraft Maintenance, Security Forces, and Airfield Maintenance personnel will inform 6 OSS/OSAA, 6 OSS/OSAT, or Command Post if significant bird activity is observed. When 6 OSS/OSAA, 6 AMW/SEFB, or 6 OSS/OSAT determines that bird dispersal is required, 6 AMW/SEFB and/or Airfield Management will respond immediately completing all documentation after dispersal.

4.3.1. Downgrading: Once BWC MODERATE or SEVERE has been declared, only 6 AMW/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 October-15 November) and spring (15 March-15 April) migration periods will be mitigated by increased BASH vigilance and response. Bird 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 birds.

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 0900-1500 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. Schedulers 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 bird activity.

4.4.2.1.2. Local IFR/VFR traffic pattern activity ceases.

4.4.2.2. SEVERE: Requires total vigilance by all agencies and extreme caution by aircrews.

4.4.2.2.1. Takeoffs and landings are prohibited without 6 OG/CC (or higher) approval.

**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 designated as perimeter road to the north (due to the close proximity of a roadway, weapons must only be fired towards the airfield in this area at all times), to the end of the 04 approach lighting pier to the south. The western boundary is the tree line. The eastern boundary is approximately 200 feet east of taxiway "Golf". Additionally, the entire wetland area east of "Golf" taxiway, between "Hotel" and "Kilo" taxiways, will be included as a designated area. Depredation by USDA will be on the airfield or into the bay west of the approach of Runway 4, and all projectiles will not travel onto buildings or across roads. Additionally when depredation has to be used outside the airfield Security forces will be notified.

5.2. Requirements: Personnel will attend shotgun and bird identification training prior to being authorized to perform depredation operations. Weapons safety is paramount and must be practiced at all times. 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 Airfield Management Operations, 6 AMW/SEFB, 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 a locally developed form at base operations. A copy of this list will be attached to the depredation permit for reference.

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 AMW/SEFB (USDA), will: Contact the Control Tower (Commercial 813-828-2796) and provide notification on the location of depredation and a time window.

- Upon approval of depredation from the tower, USDA can conduct depredation operations. If depredation is outside of the airfield Security Forces must be notified first.
- 5.4.1.2. The Control Tower will: Notify 6 OSS/OSAA (Commercial 813-828-2929/2350) with depredation information and termination of depredation operations.
- 5.4.1.3. 6 OSS/OSAA will: Notify Security Forces (Commercial 813-828-3322) with depredation information. AMOPS will log in events log.
- 5.4.2. The individual conducting depredation operations will again notify the Control Tower at the completion of depredation operations.
- 5.4.2.1. Individuals performing 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. 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/CEVN. 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 22. rifle, pistol, and pellet rifle, and 22-250. rifle. All shotgun ammo used for migratory birds will be non-lead. If needed a larger caliber rifle may be used for larger wildlife on the airfield as needed, i.e. hog, coyote, turkey, etc.
- 5.4.2.6. Personnel must be in radio contact with tower at all times 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 entering final approach patterns.
- 5.4.2.7. Personnel must be aware of their surroundings at all times. A spotter should be used to increase vigilance during operations. Do not shoot directly towards any personnel at any time. Additionally, do not shoot towards buildings or airfield equipment if it is located within 100 yards of your position or towards aircraft within 1000 yards with a shotgun.
- 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 how many birds were taken in a region and may limit the allowed take 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 will be by species on a locally created form. Information the form must contain is 1) the date birds were taken, 2) the species of the birds taken, and 3) the number of each species. These forms will be turned in quarterly to Wing Flight Safety (6 AMW/SEF). Flight Safety will then compile the total numbers and report these to 6 CES/CEVN.

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, and is located behind the commissary. 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.

**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 AMW/SEF or 6 AMW/ SEFB for coordination of remains collection and investigation as necessary.

DANIEL H. TULLEY, Col, USAF  
Commander

**Attachment 1****GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 11-2KC-135V3\_MACDILLAFBSUP, *C/KC-135 Operations Procedures*, 27 July 2009

AFI 91-202, *The US Air Force Mishap Prevention Program*, 5 August 2011

AFI 91-202\_AMCSUP, *The US Air Force Mishap Prevention Program*, 21 May 2012

AFI 91-204, *Safety Investigations and Reports*, 12 February 2014

AFMAN 33-363, *Management of Records*, 1 March 2008

AFPAM 91-212, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques*, 1 February 2004

***Prescribed Forms***

None

***Adopted Forms***

AF Form 847, *Recommendation for Change of Publication*

AF Form 853, *Air Force Wildlife Strike Report*

***Abbreviations and Acronyms***

**6 AMW**—6th Air Mobility Wing

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

**6 CES**—6th Civil Engineer Squadron

**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,

**6 SFS**—6th Security Forces Squadron

**91 ARS**—91st Air Refueling Squadron, Flight Safety

**310 AS**—310th Airlift Squadron, Flight Safety

**927 ARW**—927th Air Refueling Wing

**927 OG**—927th Operations Group

**AF**—Air Force

**AFB**—Air Force Base

**AFI**—Air Force Instruction

**AFMAN**—Air Force Manual

**AFPAM**—Air Force Pamphlet  
**AFSAS**—Air Force Safety Automated System  
**AFSC**—Air Force Safety Center  
**AGL**—Above Ground Level  
**AHAS**—Avian Hazard Advisory System  
**AMC/A3**—Air Mobility Command, Directorate of Operations  
**ASR**—Airfield Surveillance Radar  
**ATC**—Air Traffic Control  
**ATIS**—Airport Terminal Information System  
**BASH**—Bird Aircraft Strike Hazard  
**BHWG**—Bird Hazard Working Group  
**BWC**—Bird Watch Condition  
**CBZ**—Controlled BASH Zone  
**CC**—Commander  
**CEOH**—Equipment Flight  
**CEOHHE**—Pest Management QAE  
**CEQ**—Quality Assurance  
**CEVN**—Civil Engineering Natural Resources Manager  
**CEV**—Civil Engineering Management  
**CP**—Command Post  
**CV**—Vice Commander  
**CZ**—Clear Zone  
**DER**—Departure End of Runway  
**DoD**—Department of Defense  
**EPA**—Environmental Protection Agency  
**FAA**—Federal Aviation Administration  
**FAX**—Facsimile  
**FSO**—Flight Safety Officer  
**IFR**—Instrument Flight Rules  
**IMC**—Instrument Meteorological Conditions  
**MOA**—Military Operating Area  
**NOTAM**—Notice to Airmen

**OGV**—Standardization and Evaluation  
**OPREP—3**—Operational Report 3  
**OPR**—Office of Primary Responsibility  
**ORM**—Operational Risk Management  
**OSAA**—Airfield Manager  
**OSAT**—Air Traffic Control Tower  
**OSOS**—Flight Scheduling  
**OGT**—Operations Training  
**PA**—Public Affairs  
**QAE**—Quality Assurance Evaluator  
**RAPCON**—Radar Approach Control  
**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  
**VMC**—Visual Meteorological Conditions

### *Terms*

**Bird Watch Condition Codes**— 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 04, approach end).

*Note:* It is apparent that some subjectivity may be involved in declaring a BWC.

**Bird Watch Condition LOW**—: Normal bird activity on and above the airfield with a low probability of hazard. No flight restrictions apply.

**Bird Watch Condition MODERATE**— Concentrations of 5 to 10 large birds (waterfowl, raptors, gulls, etc.) or 10 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.

**Bird Watch Condition SEVERE**— Heavy concentrations of birds (more than 10 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.

## 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 04 through the CZ of Runway 22, 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 also follow mowers. Shorebirds, including Killdeer and Plovers habituate south of the BAK-12 to approach end of RWY 04. Occasionally Ospreys feed on fish at the overrun and approach end of RWY 04.

**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

