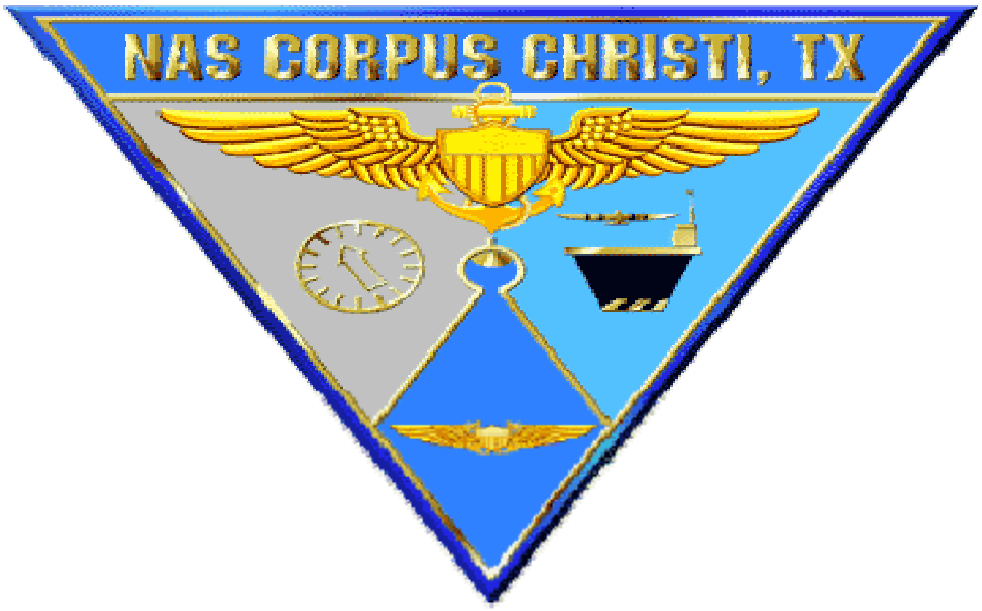
NASCORPCINST 3750.16



BIRD
AANIMAL
SSTRIKE
HAZARD

31 DEC 07

DEPARTMENT OF THE NAVY
NAVAL AIR STATION
11001 D STREET SUITE 143
CORPUS CHRISTI, TEXAS 78419-5021

IN REPLY REFER TO

NASCORPCINST 3750.16
Code N31
31 DEC 2007

NASCORP INSTRUCTION 3750.16

Subj: BIRD/ANIMAL STRIKE HAZARD (BASH) PROGRAM

Ref: (a) OPNAVINST 5090.1C
(b) NAVFAC P-73, Vol II
(c) OPNAVINST 3750.6R
(d) OPNAVINST 3710.7S
(e) FAA Handbook 7110.65
(f) SW020-AG-SAF-010 ORDNANCE TRANSPORTATION MANUAL, Chapter 3-7

1. **Purpose**. To implement guidelines and actions in accordance with references (a) and (b), to reduce the potential of collision between aircraft and birds or other animals. This instruction has been substantially revised and should be reviewed in its entirety. This instruction does not supersede or subjugate the NAS Corpus Christi Air Operations Manual or VFR Course Rules.

2. **Background**. No single solution exists to the BASH problem; a variety of techniques and organizations must be involved to ensure success of the program. The program encompasses all actions which may identify, reduce, or eliminate bird or other animal hazards to aviation, specifically, bird avoidance and bird control.

3. **Objectives**. BASH exists on this installation and within the immediate vicinity due to resident and migratory bird/animal species. Daily and seasonal bird movements create various hazardous conditions to aviation. This plan is designed to reduce the bird/animal hazard in and around Naval Air Station (NAS) Corpus Christi, and Naval Auxiliary Landing Fields (NALF) Waldron and Cabaniss.

4. **Administration**. This plan shall be reviewed and updated biennially. Recommended changes should be submitted to the NAS Corpus Christi Air Operations Officer and via the BASH Program Manager.

T. E. COOLIDGE

Distribution:
List II
COMTRAWINGFOURINST 5216.1
List I (C, D, F, I)
List II
List III (C, E, H, M, O)
List IV (B)

NAS CORPUS CHRISTI BASH PLAN

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CHAPTER 1

GENERAL

101. INTRODUCTION.

A. PURPOSE. The purpose of the NAS Corpus Christi BASH Management Plan is to provide guidance that will minimize wildlife hazards on and around the airfield that pose a threat to aviation safety. This plan is in accordance with OPNAV Instruction 5090.1B, Chapter 22, Natural Resources Management, which states that Naval Air Stations are responsible for preparing and implementing a BASH Management Plan, following the outcome of an ecological study or wildlife hazard assessment (CNO 1994). This plan also fulfills OPNAV Instruction 3750.6R.

1. What is BASH? BASH is an acronym for Bird/Animal Strike Hazard. The purpose of the BASH program is to manage the hazard associated with collisions between wildlife and aircraft. The program focuses on management of the airfield to reduce quality and attractiveness as habitat for wildlife, managing wildlife populations, thereby minimizing the potential of wildlife/aircraft strikes, and working with installation personnel to improve the reporting and communicating of wildlife activity and wildlife/aircraft strikes, both damaging and non-damaging. Damaging strikes include holes in the body of aircraft, broken engine fan blades, cracks to the canopy, etc. Damaging strikes have the potential of resulting in loss of life to aircrew, costing the Navy millions of dollars per year in repairs to naval aircraft, and loss of training opportunities. Non-damaging strikes usually involve blood smears or feather fragments stuck to the aircraft without penetration to the body of the aircraft.

2. Why is the BASH Program Important? It is important to institute a proactive BASH program at naval airfields for several reasons. The primary goal of the BASH program is to minimize the potential for loss of aircrew life. The BASH program achieves this objective by addressing the aviation safety hazard associated with wildlife near airfields. An effective BASH program also strives to minimize secondary BASH impacts, such as damage to aircraft and impairment of training. Aircraft collisions with wildlife are too costly and hazardous to not be properly addressed or managed.

3. Bird strikes have plagued Naval Aviation since its early beginnings. The Navy’s first loss of life due to a bird strike occurred in 1914, coincidentally the same year it obtained its first aircraft. From 1980-2002, Naval Aviators reported 1,420 bird strikes, which resulted in 346 aircraft mishaps, 247 FOD’ed engines and $25,607,953.00 in damages. Ten aircraft were destroyed and one fatality. However, within that same period, the USAF had two major BASH-related mishaps with two aircraft totally destroyed and 24 fatalities. These incidents, and the recent destruction of two Naval Aircraft, have heightened the Navy/DOD’s interest in BASH programs. The Navy Safety Center’s review of recent USN bird-aircraft mishaps found that the lack of a BASH Plan was a consistent deficiency.

4. The Naval Aviation Safety Program (NASP) enhances operational readiness when it preserves the lives and enhances the well-being of its members by protecting the equipment and material they need to accomplish their mission. An essential component of the NASP of the detection and elimination of aircraft hazards such as wildlife.

5. An effective BASH program at Naval Air Stations can reduce the relative risk associated with wildlife in the airfield operating environment.

Procedures have been established for effectively minimizing and communication hazardous wildlife activity, reporting wildlife/aircraft strikes, collecting and identifying wildlife/aircraft strike remains, and improving awareness of the potential hazards to naval aviation due to wildlife. The guidelines, as presented in this management plan, should be adopted by the tenant squadrons and departments of NAS Corpus Christi.

102. MISSION. Naval Air Station (NAS) Corpus Christi and Naval Auxiliary Landing Fields (NALF) Waldron and Cabaniss have a large and potentially dangerous bird and animal population. Daily animal movements in the vicinity of the airport create various hazards to aircraft. Accordingly, the BASH Program is designed to manage animals and habitat to provide increased levels of safety during the critical phases of flight. This plan establishes specific procedures to reduce known and future bird and mammalian hazards. No single solution or agency can solve the bird and mammalian strike problem. Therefore, a variety of techniques and organizations must be involved in the overall program. The NAS Corpus Christi BASH program's primary goal is to promote aviation safety through a proactive approach of managing potential wildlife hazards and educating personnel. This plan is designed to:

A. Increase awareness among military and civilian personnel of the issues central to the success of the BASH program.

B. Improve communication of wildlife hazards and activity at NAS Corpus Christi.

C. Improve wildlife/aircraft strike reporting and collection of strike remains.

D. Deter and manage wildlife hazards based on scientific research, improved wildlife/aircraft strike reporting, and information gathered through communication of wildlife hazards and activity.

E. Coordinate the efforts of all military and civilian personnel working on or near the airfield.

103. LOCATION AND SETTING.

A. AIRFIELD INSTALLATION DESCRIPTION.

1. Truax Field (NAS Corpus Christi) is an active military airfield. The primary missions supported are flight training, maritime patrol, aircraft repair, and search and rescue. The primary aircraft types using the runways are T-34, T-44, and TC-12; as well as, P-3, H-53E, Cobra, Blackhawk, Chinook, and other helicopters test flown after repairs at the Corpus Christi Army Depot; U.S. Coast Guard helicopters; and extensive transient aircraft from various Navy and other military commands.

2. NALF Cabaniss is an active military airfield. The primary mission supported is multi-engine flight training. The primary aircraft types are T-44.

3. NALF Waldron is an active military airfield. The primary mission supported is single-engine flight training. The primary aircraft type is the T-34.

B. LOCAL AREA.

1. Naval Air Station Corpus Christi (field elevation 19' MSL) is located within the corporate city limits of the City of Corpus Christi, Texas. The City of Corpus Christi lies along the southern edge of Corpus Christi Bay and is separated from the Gulf of Mexico by a barrier island

(Mustang Island). NASCC Main Installation (2,844 acres) lies on the Encinal Peninsula, and is surrounded on three sides by water: Oso Bay, Corpus Christi Bay, and Laguna Madre.

2. Naval Auxiliary Landing Field (NALF) Waldron (field elevation 25’ MSL)(851 acres), located south of the main installation on the Flour Bluff Peninsula, which is bordered by Oso Creek, Corpus Christi Bay, and Laguna Madre. NALF Waldron contains grazing leases outside of the airfield fence line, on approach areas.

3. NALF Cabaniss, (971 acres)(field elevation 30’ MSL) located to the west of the main installation, is located in the city limits of Corpus Christi and lies adjacent to a putrescible waste landfill transfer station. The site contains agricultural out leases for sorghum (in clear zone areas) and hay (within the airfield fence line).

C. GENERAL TOPOGRAPHY.

1. Truax Field, Cabaniss, and Waldron have generally level topography. Cabaniss is considered an inland field, and Waldron and Truax Field are considered coastal fields due to their proximity to beach/bay habitats. Aircraft in the pattern for Truax fly over the Oso Bay mudflats and Spoil Islands in the upper Laguna Madre.

2. Laguna Madre. Aircraft in the pattern for Waldron fly over the upper Laguna Madre and Oso Bay as well. Cabaniss is adjacent to Oso Creek, a brackish water body. A private, dammed, freshwater pond lies on runway 35 approach.

D. LANDFILLS. Elliott Landfill Transfer Station, a City of Corpus Christi facility, was built on property adjacent to NALF Cabaniss in the 1970s, and expanded in the early 1980s. Once a putrescible landfill with a composting facility, it has been converted to a transfer station, but remains extremely attractive to thousands of gulls and vultures, as well as wading birds, ducks, blackbirds, and grackles.

E. HABITATS. South Texas lies in the Central US flyway and is a world-renowned birding area, with over 300 species of birds known to inhabit or pass through the region (See NASCC Integrated Natural Resources Management Plan for species list). The major habitats, woodlands, wetlands, grasslands, and open water are very attractive to birds. Additionally, standing water, perch sites, tall brush, and short grass are present on each airfield and attract large numbers of individual and flocking birds. The combination of all of these environments, along with the highest bird density for a cubic kilometer of atmosphere of any place in the United States (150 birds per cubic kilometer has been registered during migratory periods) increases the potential for serious BASH issues.

104. SPECIES. Chapter 5 contains a comprehensive listing of birds/mammals, which may be observed on all airfields. There may be occasional sightings of other species during migration, but this list is considered thorough for BASH purposes.

105. EXPLANATION OF TERMS.

A. WILDLIFE SERVICE (WS). An office of the U. S. Department of Agriculture (USDA) Animal and Plant Health Inspection Service which may be under contract at installations to provide BASH assistance.

B. ACTIVE BIRD DISPERSAL. Harassment techniques employed to disperse birds from the airfield and surrounding areas. Methods **may** include chase, pyrotechnics, bioacoustics, and depredation.

C. BASH. General term to describe bird and other wildlife which represent a collision hazard to aviation operations.

D. BIRD HAZARD WORKING GROUP (BHWG). Local committee of base, community citizens, and unit offices concerned with bird hazards. Executes and makes recommendations to the BASH Program.

E. BIRD HAZARD CONDITION (BHC). A bird hazard alert condition used to warn aircrew of bird activity.

1. BHC Red (Severe). Heavy concentration of birds (more than 15 large or 30 small) on or immediately adjacent to the active runway or their specific locations that present an immediate hazard to flight operations. Active dispersal will be initiated during this BHC (Bird Hazard Condition) and dispersal team personnel shall remain on the airfield actively involved in dispersal techniques until this BHC is downgraded.

2. BHC Yellow (Moderate). Moderate concentrations of birds (5 to 15 large or 15 to 30 small) observed in locations that represent a probable hazard to flying operations. Positive actions should be taken to disperse the concentrations of birds that are causing the hazard.

3. BHC Green (Low). Sparse bird activity on and above the airfield (less than 5 large or 15 small) with a low probability of a hazard to aviation.

F. BASH WINDOW. Known periods of severe bird activity where restrictions to flight operations may be imposed.

G. BASH ADVISORY. A radio transmission from Air Traffic Control (ATC) or aircrew reporting specific bird hazard information. May be real-time or disseminated via Automated Terminal Information Service (ATIS) broadcasts.

H. BASH DETECTION AND DISPERSAL TEAM (BDDT). Roving airport patrol that reports BHC and disperses problem birds via approved dispersal methods.

I. DEPREDATION. Technique that may be used to remove problem birds permanently from the airfield and hangars when other scare tactics are ineffective. Permits are required from the U.S. Fish & Wildlife Service for migratory bird species and from the State Fish & Game Agency for game animals, such as deer and javalina.

J. PYROTECHNICS. Noise producing devices fired from pistol or shotgun. May be used by BDDT to scare birds away from runways and airport areas. Pyrotechnics to be used are Class 1.4E explosives.

K. BIOACOUSTICS. Recorded sounds of bird distress and predator calls that may be used by BDDT to disperse birds off runways and other airport areas.

L. PROPANE CANNONS. Stationary non-projectile sound producing device that may be used to disperse birds from airport areas.

M. MODELS/DECOYS. Various static devices that may be used to disperse birds from airport areas. May include scarecrows, decoys, Mylar tape, and eye spots.

N. FALCONRY. Active dispersal of problem birds using trained Falcons that may be used to disperse birds from airport areas.

O. BIRD STRIKE. Any contact between a bird or other animal and an aircraft, whether or not damage occurred. **All wildlife strikes, damaging or non-damaging, are required to be reported to the Navy Safety Center.**

P. BIRD EXCLUSION ZONE. The designated area surrounding the airfield where bird habitation is discouraged.

Q. SALVAGE. The act of collecting wildlife or wildlife remains from an aircraft or from the airfield environment. Birds covered by the Migratory Bird Treaty Act must be reported to the U.S. Fish & Wildlife Service via a Salvage Permit. Certain mammalian species are reported through state agency permitting requirements.

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CHAPTER 2

ORGANIZATIONAL TASKS AND RESPONSIBILITIES

201. AUTHORITY. The Commanding Officer is responsible for the BASH Program and the approving authority for all BHWG recommendations. The BASH Program is a part of the Aviation Safety Program, and as such, the Air Operations Officer shall monitor the effectiveness of the program. Active participation by the Air Operations and Environmental Departments are the key to ensuring success of the program.

202. BIRD HAZARD WORKING GROUP (BHWG). The BHWG is organized to implement and monitor the BASH Management Plan; collect, compile, and review wildlife hazard data; and to recommend actions in land and wildlife management and/or operational procedures to reduce wildlife hazards to aircraft. The BHWG allows installation departments affected by wildlife hazards the opportunity to meet and discuss problems and possible solutions. BHWG members include civilian and military personnel from various departments. These representatives are expected to disseminate pertinent information from the meetings to co-workers within their respective departments. It provides those agencies affected by bird problems the opportunity to meet and discuss possible solutions. The BHWG shall meet quarterly with representatives from each organization concerned with bird hazards.

A. PARTICIPANTS. As a minimum, the group shall have a representative assigned from the following specialties:

1. Air Operations Officer (Chairman).
2. BASH Program Manager (Co-Chairman).
3. Airfield Manager.
4. Navy Biologist (as required).
5. TRAWING FOUR Aviation Safety Officer.
6. Naval Facilities Command.
7. Air Traffic Control.
8. VT-27 Squadron Safety Officer.
9. VT-28 Squadron Safety Officer.
10. VT-31 Squadron Safety Officer.
11. VT-35 Squadron Safety Officer.
12. Customs.
13. Coast Guard.
14. CCAD.
15. HM-15.
16. Morale Welfare and Recreation (as required).

17. Flight Support Representative.

18. Fire & Emergency Services (as required).

19. Security Department (as required).

20. Weapons Division (as required).

21. Safety Department (as required).

B. BHWG MEETING SCHEDULE. BHWG meetings shall be held quarterly in Building 68, Air Traffic Control Conference Room. Purposes of the meetings are to promote communication of wildlife hazards, to discuss solutions, and assess the effectiveness of the BASH program.

C. BHWG FUNCTION. The tasks and responsibilities of the BHWG include:

1. Develop, update, execute, and manage the implementation of the NAS Corpus Christi BASH Management Plan.

2. Monitor base-wide compliance with reference (c).

3. Collect, compile, and review data on all wildlife hazards.

4. Identify and recommend actions to reduce wildlife hazards through land and wildlife management practices.

5. Recommend changes in operational procedures.

6. Prepare informational programs and safety briefings for aircrews.

7. Disseminate wildlife activity data as provided by the BASH Program Manager.

8. Facilitate implementation of BASH management recommendations, as outlined in the BASH Management Plan.

203. AIR OPERATIONS DEPARTMENT. Tasks and responsibilities of the Air Operations Department:

A. AIR OPERATIONS OFFICER/AIRFIELD MANAGER. The tasks and responsibilities of the Air Operations Officer/Airfield Manager include:

1. Designate BASH Program Manager who will co-chair the BHWG.

2. Report all wildlife strikes to the BASH Program Manager.

3. Coordinate the Course Rules briefings with the BASH Program Manager.

4. Request and maintain annual funding in support of the NAS Corpus Christi BASH Management Plan.

5. Maintain a file of all wildlife strikes occurring at NAS Corpus Christi, NALF Waldron, NALF Cabaniss, and working areas.

6. Through the TRAWING FOUR Aviation Safety and BASH Program Manager, provide liaison with all aviation activities at NAS Corpus Christi concerning BASH issues.

7. Develop passive, active, and static procedures to reduce BASH hazard.

8. Monitor grass height, drainage ditches, etc., and report problems to Airfield Manager.

9. Establish and maintain a trained BDDT that complies with Environmental and Weapons standards.

10. Develop a continuing information and education program to disseminate bird hazard information.

11. In conjunction with the Tenant Command Safety Officers, conduct periodic exercises and inspections of the BASH program.

12. Establish a BASH awareness training program for all airfield management, ATC, and airfield facilities personnel.

13. Develop and maintain Standard Operating Procedures (SOP) for BDDT members for the use and handling of pyrotechnics and firearms in compliance with (NAVSEA Op 5 Vol. 1, Rev 6).

B. BASH PROGRAM MANAGER. The tasks and responsibilities of the BASH Program Manager include:

1. Chair / co-chair the quarterly BHWG meetings.

2. Execute and manage the BASH Program as directed by the Air Operations Officer.

3. Conduct ongoing wildlife/airfield surveys and provide data and analysis to the BHWG.

4. Brief tenant commands on BASH activities and potential wildlife hazards via safety stand downs and squadron briefings.

5. Develop natural resource management strategies to reduce wildlife/aircraft strike potential.

6. Initiate necessary environmental documentation for implementation of BASH management practices.

7. Maintain and review a database of all wildlife/aircraft strikes occurring at NAS Corpus Christi, NALF Waldron, and NALF Cabaniss Fields.

8. Maintains the records for Federal and State permits required for depredation, salvage, collection, and possession of wildlife species.

9. Coordinate wildlife studies with Environmental as necessary to improve hazard control, assess the potential impacts of control activities on wildlife populations and distribution, and evaluate the potential effects of wildlife displacement.

10. Implement wildlife damage control measures, e.g. wildlife hazing/deterrence, trapping, lethal control, etc.

11. Brief transient squadrons on potential wildlife hazards during Air Operations Course Rules briefing.

12. Monitor wildlife activity during the biennial air show.

13. Coordinate BASH management practices with other NAS Corpus Christi departments, as necessary.

14. Train BDDT IAW Weapons Division Qualification/Certification Program. This training will focus on the safe handling, use and transport of pyrotechnics.

15. Train BDDT on use of active scare techniques, as well as placement of static deterrent devices.

C. AIR TRAFFIC CONTROL. Tasks and responsibilities of the Air Traffic Control Division include:

1. Designate a representative to the BHWG.

2. In the absence of BDDT, or at the discretion of the Facility Watch Supervisor, declare BHC based on reported sightings reported by reliable DOD personnel.

3. Pass BHC information to Flight Planning.

4. Advise Air Operations Officer, Airfield Manager, the BASH Program Manager, and Tenant Command Operations Duty Officers anytime BHC RED (Severe) condition is declared. Include information in NOTAMs.

5. Alert the BASH Program Manager of observed wildlife hazards that require dispersal.

6. Facilitate BDDT priority movement on the airfield to disperse wildlife on or near active runways.

7. Include BHC and bird advisory information on ATIS broadcasts. Update BHC as a result in changes in bird activity.

8. Issue ATC/pilot report bird information advisory to aircraft over air traffic control frequencies, per FAA Orders 7110.65 and 7210.3.

9. Establish a BASH training program covering this instruction for all ATC personnel. This training will be documented in training jackets and reviewed annually.

D. FLIGHT SUPPORT. The tasks and responsibilities of the Flight Support include:

1. Designate a representative to the BHWG.

2. Respond to probable wildlife/aircraft strikes reported by ATC.

3. Conduct periodic inspections of the airfield for wildlife/aircraft strikes.

4. Assist in collection, bagging, and storage any wildlife remains found on the airfield. Notify the BASH Program Manager for pick up of remains.

5. Ensure BDDT personnel receive airfield operator course instruction.

E. BIRD DETECTION AND DISPERSAL TEAM. The tasks and responsibilities of the Flight Support include:

1. Responsibility for bird detection and dispersal is an airport operations function and as such falls under the control of the NAS Air Operations Officer.

2. The BDDT will be staffed by: TO BE DETERMINED

3. BDDT will be active on the airfields Monday-Friday and will patrol the flight line from sunrise to sunset. During other periods, the BDDT may be on call, or its functions performed by others trained, such as, Crash Crew, Flight Support, or Transient Line personnel.

4. The BDDT has access to bioacoustics equipment (Bird B Gone sound systems) installed at the wheels watch shacks and tow vehicles which will be operated each morning and evening during field lighting checks and as required periodically through out the day to disperse wildlife from the airfield.

204. TRAWING FOUR AVIATION SAFETY OFFICER. Responsibilities of the TRAWING FOUR Safety Officer include:

A. Monitor the effectiveness of the BASH Management Plan.

B. Ensure BASH Management Plan is a part of safety reviews conducted by the Naval Safety Center.

C. Conduct training as appropriate to support this plan.

D. Publish operating instructions and conduct training as appropriate to support this plan.

E. Ensure representatives are assigned to the BHWG.

F. Issue specific guidance for units on:

1. Bird strike reporting.

2. Bird remains collection and preservation by maintenance personnel.

3. Per reference (d), ensure squadrons report all bird/animal strikes via BASH HAZREP using WESS.

205. TENANT COMMAND SAFETY OFFICERS. Responsibilities of Tenant Command Safety Officers include:

A. Designate a representative to the BHWG.

B. Ensure a bird hazard awareness program is established and briefings conducted to include films, posters, and information on seasonal bird hazards.

C. Ensure aircrew briefings are conducted on bird hazards and attendance documented.

D. Monitor, on a regular basis, aircrew mission briefings to ensure existing BASH information is briefed.

E. Coordinate unit flying activities to minimize exposure to migratory birds.

F. Make BASH a special interest item during Spring and Fall migration periods.

G. Issue specific guidance to maintenance personnel for reporting observed hazardous bird activity to the Tower or Facility Watch Supervisor.

H. Issue specific guidance to maintenance personnel for reporting of all discovered bird strikes on aircraft to the BASH Program Manager.

I. Issue procedures for the preservation of bird remains if discovered on an aircraft. Even the smallest fragment of a feather or bloodstain should be preserved for identification.

J. Ensure wildlife/aircraft strikes are reported to the BASH Program Manager and the Naval Safety Center via WESS (http://www.safetycenter.navy.mil/).

K. Brief bird hazard awareness and the Corpus Christi BASH program to all hosted aviation units.

206. PUBLIC SAFETY DEPARTMENT. Tasks and responsibilities of the Public Safety Department:

A. FIRE AND EMERGENCY SERVICES. The tasks and responsibilities include:

1. Designate a representative for the BHWG.

2. Respond to the emergency phase of a bird/animal strike or possible bird/animal strike.

3. Assist in collection, bagging, and storage any wildlife remains found on the airfield. Notify the BASH Manager for pick up of remains.

B. SAFETY. The tasks and responsibilities include:

1. Provide representative for BHWG, when required.

2. Review instructions, training plans, SOPs for compliance with Occupational Safety and Explosives Safety standards.

3. Perform mishap investigations, as applicable.

C. SECURITY. The tasks and responsibilities include:

1. Provide representative for BHWG, when required.

2. Ensure training is conducted for all security and gate personnel concerning BDDT weapons procedures as applied under this instruction.

3. Enforce base regulations that prohibit the feeding of wildlife, including feral cats on the installation.

4. Report any overflowing trash receptacles onboard Naval Air Station to the NAVFAC POC.

D. WEAPONS. The tasks and responsibilities include:

1. Provide representative for the BHWG, when required.

2. If required, provide Ready Storage Lockers (RSL) for BASH Class 1.4 pyrotechnics and small arms ammunition.

3. Provide Class 1.4 weapons storage and firearms safety training to BDDT.

4. Provide technical assistance in review of BDDT SOP.

207. NAVAL FACILITIES COMMAND (NAVFAC). The tasks and responsibilities include:

A. Designate a representative to the BHWG.

B. Ensure implementation of BHWG proposed projects to reduce wildlife hazards to aviation safety.

C. Provide assistance in partnership with adjacent landowners regarding their land management practices.

D. Maintain runway lateral and approach zones in a manner that is least attractive to birds.

E. Ensure all trash receptacles onboard NAS Corpus Christi has covers that prevent bird access and are emptied on a timely basis to prevent overflowing. Trash is a significant bird attractor.

F. Provide vehicle(s) for BDDT. Vehicles shall meet the requirements of NAVSEA OP-5 for the transport of explosives, per reference (f).

G. Incorporate BASH friendly management practices as described in the base Integrated Natural Resources Management Plan (INRMP).

H. Oversee grounds maintenance contract and ensure BASH criteria is properly addressed.

I. Monitor vegetation growth within the Primary Surface Area, such as grass height, woody vegetation, and aquatic vegetation. Also, coordinate mowing and vegetation removal with the Airfield Manager.

J. Monitor surface water drainage within the Primary Surface Area and report any drainage problems, such as, persistent standing water to the Airfield Manager.

K. Remove wildlife found in hangars e.g. raccoons, opossums, etc. per guidance from the BASH Program Manager.

L. Ensure training is conducted for all contractor personnel on responsibilities, actions, and techniques applied under this instruction.

1. ENVIRONMENTAL. The tasks and responsibilities include:

a) Designate a representative for the BHWG.

b) Recommend changes to environmental conditions and management practices to reduce bird strike potential. These changes will be presented to the BHWG for consideration.

c) Initiate necessary environmental documentation for airfield modifications as required by law.

d) Provide Natural Resources/WS support as outlined below:

1) Obtain Federal and State permits required for depredation, salvage, collection, and possession of all protected avian species.

2) Coordinate wildlife studies as necessary to improve wildlife hazard control, assess the potential impacts of control activities on wildlife populations and distribution, and evaluate the potential effects of wildlife displacement.

208. PUBLIC AFFAIRS. Public Affairs will provide a public information program designed to inform base personnel, dependents, and the general public on the hazards of uncontrolled bird activity and the measures being taken to minimize the danger.

CHAPTER 3

CONCEPT OF OPERATIONS

301. GENERAL. The BASH program is an ongoing process including both information dissemination and active/passive bird control techniques. Of these processes, the most critical is the aircrew notification and warning system. This system establishes procedures for the immediate exchange of information between ground agencies and aircrews concerning the existence and location of birds that pose a hazard to flight safety. Additionally, a cautionary advisory is published in the DOD Flight Information Publication AP/1 under Supplementary Aerodrome Remarks.

302. BIRD HAZARD WARNING SYSTEM. The following standardized BHC will be used at NAS Corpus Christi, NALF Waldron, and NALF Cabaniss to warn aircrew and support personnel of the current bird threat to operations. These codes are identical to the USAF codes in section B of the DOD FLIP (Flight Information Handbook). Bird locations should be given with the condition code.

A. BHC RED (SEVERE). Generally defined as heavy concentrations of birds (more than 15 large or 30 small) on or immediately adjacent to the active runway or other specific locations that present an immediate hazard to flight operations. Active dispersal will be initiated during this BHC and BDDT personnel shall remain on the airfield actively involved in dispersal techniques until this BHC is downgraded.

Note: RED (SEVERE) may also be declared when birds of any size or quantity present an immediate hazard.

B. BHC YELLOW (MODERATE). Generally defined as moderate concentrations of birds, (5-15 large or 15-30 small) observed in locations that represent a possible hazard to flight operations. Positive actions should be taken to disperse the concentrations of birds that are causing the hazard.

C. BHC GREEN (LOW). Sparse bird activity on and above the airfield (less than described in Yellow) with a low probability of hazard.

Note: If, in the judgment of the observer, the number of birds is less than those indicated for a specific BHC, and a hazard is believed to exist, a higher BHC may be declared. Example: Condition RED may be declared if vultures or a deer are immediately adjacent of the active runway.

BIRD HAZARD CONDITIONS

BHC	MODIFIER	BIRD ACTIVITY
RED	SEVERE	15+ large birds or 30+ small birds
YELLOW	MODERATE	5 – 15 large or 15 – 30 small
GREEN	LOW	Sparse bird activity

Table 1

Note: The Tower may determine if bird activity away from the primary runway constitutes a threat to flying operations. If it does not, the Tower may lower the BHC for the primary runway while keeping the higher BHC for the other area.

Note: BHC descriptions will be reported using the colors (red) vice modifiers (severe). Until DOD standardizes this system, either of these terms may be encountered at other military airfields. While each base may have a slightly different definition for its hazard conditions, an associated level of danger can reasonably be ascertained from either reporting standard. Requests for clarifications from ATC or airport management are recommended when confusion or doubt exists.

D. BIRD WATCH ALERT. A general warning that indicates when weather, time of day, and seasonal conditions make an influx of birds onto the airfield likely. Upon receipt of special conditions, Tower Supervisor will set the alert and the Tower will include a general statement in ATIS broadcasts.

E. BASH WINDOW. BASH windows are based on historical bird survey data that show specific times when a hazard is known to exist, i.e., dawn seagull movements, etc. When BASH windows are set, aircraft operations during these times are not recommended. Squadron flight schedulers should avoid scheduling operations during BASH windows.

303. BIRD HAZARD CONDITION REPORTS.

A. BIRD HAZARD REPORTING. The NAS Corpus Christi Air Operations Officer, FWS, or designated representative ensures hazardous conditions are reported. Declaration of a BHC will be based on the following:

1. Visual observation of bird activity on or near the airfield by Tower or BDDT personnel.

2. Information relayed by ATC Radar, airborne aircraft, and taxiing aircraft.

3. Observations may be relayed to the Tower by any of the following personnel: airfield facilities, weather observers, ground electronics maintenance, airfield lighting technicians, crash crew, sweepers, mowers, security police, transient line personnel, and any other personnel driving on the airfield.

B. BASH DETECTION/DISPERSAL TEAM BHC REPORTING.

1. The most accurate and real-time reporting of bird hazard information is obtained from the BDDT. This roving patrol is present on the airfield throughout the day (Monday-Friday, sunrise to sunset) and is in the best position to make accurate BHC reports.

2. When the BDDT is patrolling the airfield, they will have the primary responsibility to make BHC reports to the control tower. The BDDT will continue to make real-time reports and update BHC as hazard conditions change.

3. Once BHC RED (Severe) has been declared, the condition will be updated, at a minimum, every five minutes until downgraded. When aircraft are holding for BHC RED, the BDDT will report to the Tower immediately if initial attempts to disperse the birds have failed. During BHC RED, the BDDT shall remain on the airfield and be actively involved in dispersal techniques until BHC RED is downgraded.

C. NALF WALDRON AND CABANISS.

1. Prior to scheduled flight operations, BDDT personnel will make a BASH sweep of the runway and pass BHC reports to the FWS and RDO (if on station).

2. BDDT personnel will make periodic sweeps of the runway when breaks in flight operations allow, and report BHC to the FWS and RDO (if on station).

D. BHC DECLARATIONS BY MAINTENANCE PERSONNEL, SWEEPERS, GRASS MOWERS, AND OTHERS.

1. If a bird hazard exists, other personnel may notify the BDDT, Tower, or FWS, as applicable. This notification can be made on a radio net or by telephone. Telephone reports can be passed to the FWS at extension 5502. Reports should include:

a) Identity of caller (agency for ground personnel, call sign for aircrews).

b) Location.

c) Altitude.

d) Time of sighting.

e) Approximate number of birds.

f) Type of birds (if known).

g) Behavior of birds (soaring, flying to or from a location, etc).

E. AIRCREW REPORTING. Aircrews should report significant activity. On a low-level route/range area, notify ATC and Squadron Command/Operations Duty Officer.

304. DOWNGRADING BHC. Once a BHC has been declared, it shall be downgraded commensurate with updated information. The Tower Supervisor will make the final determination on BHC. NALF Waldron and Cabaniss FWS will make final determination on BHC.

305. BIRD HAZARD COMMUNICATION. Disseminating BHC is critical to BASH effectiveness. The agencies below will disseminate the BHC by the following means.

A. CONTROL TOWER COMMUNICATIONS.

1. Include BHC on ATIS Broadcasts.

2. Notify inbound/departing aircraft of BHC if aircraft has received ATIS and the BHC has changed.

3. Provide additional bird advisories per reference (e).

4. The Tower Supervisor will direct the BDDT to the location where the wildlife is posing a problem.

5. Pass BHC to FWS/Flight Planning.

6. For rapidly changing BHC place a statement on ATIS advising aircrews to contact Ground, Tower, or Final Controller for the latest BHC.

7. Pass NALF Waldron and Cabaniss BHC to aircraft outbound to NALF.

8. Notify other area airfields via ATC direct lines of all sightings of large flocks or migratory movements.

B. FWS COMMUNICATIONS.

1. Notify the BASH Program Manager and the NAS Corpus Christi Operations Duty Officer when the BHC is changed to Condition Red.

2. Pass BHC to NALF Waldron and Cabaniss Tower(s).

C. FLIGHT PLANNING COMMUNICATIONS.

1. Flight Planning Office will, upon receiving the BHC from the Tower; update the Airfield Information Display in Base Operations.

2. Provide BASH information and warnings to local and transient aircrews.

306. BIRD DISPERSAL TEAM PROCEDURES. BDDT will periodically patrol Truax Field, NALF Waldron, and NALF Cabaniss Monday-Friday or other times as needed, or when there has been a report of wildlife activity between sunrise and sunset.

A. Prior to initiation of dispersal actions the BDDT leader will coordinate the location and methods with the Tower Supervisor and ensure that BHC RED has been declared prior to dispersal activities on the duty runway.

B. Once approval has been obtained from the Tower Supervisor the BDDT will begin dispersal techniques.

C. If initial method does not work, it may become necessary to remove several birds via lethal methods to reinforce the dispersal methods.

Note: Lethal control shall be within depredation permit guidelines.

307. TYPES OF BASH DISPERSAL EQUIPMENT.

A. GENERAL. There are a variety of methods for dispersing birds using static, pyrotechnic, bioacoustics, and depredation equipment. Any or all of these may be used to control bird activity.

B. STATIC DETERRENT DEVICES. Static deterrents include, but are not limited to: propane cannons, scarecrows, silhouettes, and effigies. They are often effective in bird deterrence. Static devices are designed to augment the activities of the bird dispersal teams. At no time should static deterrents be considered a replacement for dispersal teams. Static devices should be moved by the BDDT 50-100 feet from their existing locations at least once daily. This activity will inhibit the decline in their deterrent effect occurring as wildlife become accustomed to the device.

C. PROPANE CANNONS. The BDDT may position and operate propane sound cannons based on active runway, bird locations, and air traffic density. Locations will be changed daily to avoid habitation by the birds. At a

minimum, one cannon each will be placed on the approach end, midfield, and departure end.

D. BIOACOUSTICS. Bioacoustics is audio taped distress or predator calls of actual birds. Special care must be taken to play the tape in short intervals to prevent habitation by the birds. BDDT will play the tape 20-30 seconds, and then pause briefly. Repeat as required. Birds should respond by taking flight or becoming alert. These calls are effective for waterfowl, gulls, songbirds, and shorebirds. Pyrotechnics should be used in conjunction with bioacoustics to enhance complete dispersal. Bioacoustics will be the first option employed to control airfield bird habitation.

E. PYROTECHNICS. Pyrotechnics are effective for dispersing most bird species and should also be use for coyotes, deer, and other animals. Pyrotechnics are fired from modified pistols and 12 gauge shotguns. Pyrotechnics may include a variety of devices similar to commercial fireworks, including bangers, whistlers, screamers, and salutes. These small but very loud firecrackers are shot from the pistol/shotgun into flocks or near individual animals to frighten them away when they are discharged. Proper procedures for using Pyrotechnics are as follows:

1. Liaison with the Tower prior to discharging pyrotechnics and coordinate the location. If aircraft operations are imminent; ensure the BHC is raised prior to initiating dispersal operations.

2. Inform Security Police prior to discharging pyrotechnics on the flight line.

3. Use ear and eye protection, and gloves.

4. If applicable, play the distress call 20-30 seconds to get the birds to respond by taking flight or becoming alert. Do not be surprised if they gather around the vehicle that is playing the distress tape. They are responding to one of their own who they believe is “hurt” or “in distress”.

5. Do not load the gun in the vehicles. Step outside, cock the gun, load the cap then load the pyrotechnic in the barrel of the gun.

6. Point the launcher at 45 degrees or higher into the air, preferably toward the flock of birds. Turn away from the launcher and pull the trigger.

F. LETHAL CONTROL (DEPREDATION). Occasional depredation of birds reinforces the other methods. Shooting one or two from a flock then following with a volley of pyrotechnics is generally a very effective strategy for deterrence. Domestic Pigeons, European Starlings, and House Sparrows may be removed without permit. All birds (with the exception of the Domestic Pigeon, European Starling, and the House Sparrow) that are removed using lethal methods must be reported to the U. S. Fish & Wildlife Service under the Depredation permit process. Any mammals removed may require a state equivalent permit.

G. RECORD KEEPING. Activity logs will document all bird dispersal operations to include species, location, methods, and number of birds dispersed. These will be forwarded on a weekly basis to the BASH Program Manager. Monthly data will be summarized at BHWG.

308. FIRE AND EMERGENCY SERVICE PROCEDURES. If fire-fighting crews detect the presence of birds on/or near the airfield, they will pass the information

to the BDDT and Tower. When BDDT is not manned, crash vehicles may be used to disperse birds/wildlife as required.

309. LAND MANAGEMENT PROCEDURES. One of the most effective and permanent methods of discouraging wildlife from using the airfield is the removal of attractive habitat features. A comprehensive habitat management plan should be developed (when funding and manpower are available) for the Primary Surface Area (PSA), defined as the area surrounding the airfield measuring 750 feet from the centerline of the runways plus the approach zones. The following land use management practices are to be applied within the PSA and incorporated into a habitat management plan.

A. VEGETATION. Grass heights in excess of 14 inches provide habitat for rodents, which attract birds of prey (raptors). In addition, long grass may lay flat, referred to as lodging, and encourage flocking species to loaf on the airfield. Areas with grass heights below 7 inches are of equal concern because they attract loafing birds (such as geese). Therefore, grass height should be maintained between 7 and 14 inches within the PSA. When grasses do not naturally achieve at least 10” in height they should be encouraged to do so by fertilization. Mowing should begin adjacent to runways and finish in the infield or outer-most grass areas. This will cause prey and other animals to move away from active runways, thus minimizing the potential for a wildlife/aircraft strike during take-off or landing. Grass should be cut before it goes to seed to discourage seed eating birds.

B. CONTROLLING BROAD-LEAFED WEEDS. Keep broad-leafed weeds to a minimum on the airfield. Apply herbicides as necessary for control. Broad-leafed weeds attract a variety of birds, may produce seeds or berries, and may limit grass growth. Obtain assistance in herbicide selection for weed control, appropriate grass seed selection, fertilization, and erosion control from the Navy Biologist.

C. PLANTING BARE AREAS. Eliminate bare areas on the airfield. Plant grass as necessary and appropriate to maintain ground cover at 7 inches to 14 inches in height.

D. FERTILIZING. Selectively stimulate grass growth to promote a uniform cover at 7 inches to 14 inches in height. Irrigation may be required to support turf growth.

E. REMOVING EDGE EFFECT. Maintain the airfield as uniformly as possible to reduce the transition zone between two distinct habitat types (e.g., brush to grassland).

F. LEVELING OF AIRFIELD. Level or fill high or low spots to reduce attractiveness to birds and prevent standing water.

G. REMOVING DEAD VEGETATION. As soon as possible, remove dead vegetation such as brush piles, and the cover it affords.

H. REMOVING BIRD AND ANIMAL CARCASSES FROM THE AIRFIELD. This is to avoid attracting scavengers that feed on them. Forward remains, which may have been caused by collision with aircraft, to the BASH Program Manager for identification.

I. PEST CONTROL. Invertebrates and rodents are key food sources for many birds. Periodically survey and reduce these pests when required. Pesticides and traps can reduce pest populations. Only Armed Forces Pest

Management Board (AFPMB) approved pesticides are authorized, and they must be used strictly according to label instructions.

J. MAINTAINING DRAINAGE DITCHES. Regularly inspect ditches to keep them clear. Maintain ditch sides as steeply as possible (minimum slope ratio of 5 to 1) to discourage wading birds and emergent vegetation. Improve drainage as necessary to inhibit even temporary ponds or puddles. When able, cover ditches with netting/plastic fencing.

K. EMPLOYING EROSION CONTROL VEGETATION. Use vegetation that is appropriate for the region and does not produce seeds at heights below 14 to 18 inches.

L. ELIMINATE ROOSTING SITES. Control roosts by vegetation management of roost sites where possible. Prune trees to reduce the number of perches if necessary.

M. BIRD PROOF BUILDINGS, HANGARS, AND STRUCTURES. Often, bird proofing of buildings and hangars is required to exclude Pigeons, Sparrows, and Swallows. Excluding birds from a structure they currently utilize will often displace them to an adjacent structure. Existing birds should be destroyed (in accordance with the depredation) prior to the exclusion effort whenever possible. Denying access by screening windows, closing doors, and blocking entry holes is most effective. When necessary consider:

1. Toxic perches may be installed where maximum numbers of birds will contact them. Ensure perches are maintained with avicides to remain effective.

2. Pellet guns may be used as a short-term solution only. Use of lethal controls will be performed by authorized personnel only. Proper safety equipment and skilled personnel are required.

3. Netting may be installed under superstructure to exclude birds from roosting areas.

4. Avitrol, a pest management tool, may be placed in or near hangars to remove birds or to create a distressed response that scares other birds.

5. Trapping and removal. A large cage with food and water may be used to trap birds. If used, release birds away from buildings or depredate if permitted by law.

6. Sharp projections may be used in limited areas such as ledges and overhands, or small places where birds cannot be allowed. However, they are too expensive for large areas.

7. Night harassment. May use high-pressure air or water to make hangars an undesirable roosting site. Persistence is the key.

310. MANAGING OFF-BASE LAND USE. The Navy cannot control off-base land use; however, when a proposed land use may increase or alter bird populations and habits (i.e., landfills, new crops, etc), the Navy concerns should be addressed at public hearings and zoning meetings. The Navy Biologist and Public Works shall monitor off-base land use and report findings to the BHWG.

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CHAPTER 4

AIRCREW PROCEDURES

401. FLIGHT PLANNING.

A. Check FLIP AP/1 (Supplementary Aerodrome Remarks) and NOTAMs for information about permanent and seasonal bird problems at both departure and destination airports and on route of flight.

B. Check local NOTAMs and flight planning displays for BHC and BASH Windows in effect.

C. Consult with the Tenant Command/Operations Duty Officer for additional BASH information.

D. Brief all crewmembers on potential bird problems.

E. Discuss emergency procedures before departure, including aborts following a strike and engine failure.

F. Discuss procedures for cockpit lost communications, including change of aircraft control.

G. If applicable, ensure day/night visor is worn.

402. AERODROME PROCEDURES.

A. Prior to taxi, consult the ATIS broadcast for current BHC.

B. When taxiing, watch for birds on the airport. The most frequently struck birds (Meadow Lark) have a brown or black coloring on their back and yellow undercoat making them hard to see on the tarmac or concrete. Flocking birds may be partially hidden in grass areas. Look for raptors circling overhead, perched in trees, tall bushes and on airfield structures. Report bird sightings to the Tower immediately.

C. Birds on the ground face into the wind and may not see or hear you coming. They may take flight just prior to you reaching them.

D. If birds are observed, notify the Tower and request that the BDDT disperse them before takeoff if they are in a location that presents a likely danger to your or another aircraft.

E. Use landing lights as appropriate. Although there is no conclusive evidence that birds see and avoid aircraft lights, it will make the aircraft more visible.

D. Travel as much as possible above the bird layer. Subject to Course Rules/ATC instructions, minimize time spent below 2000 feet AGL.

I. If dense bird concentrations are expected, consider avoiding high-speed descent and approach. Reducing speed can significantly reduce impact energy. The force of impact is roughly proportional to the square of the aircraft speed.

J. If flocks are encountered during approach, consider going around for a second attempt, the approach area may then be clear.

K. When able, descend and climb-out in a straight line. This makes it easier for the birds to anticipate your flight path and thus get out of your way.

L. Consider avoiding flying one hour before and after dawn and dusk to the maximum extent practical.

403. LOW LEVEL ROUTES. All flights should avoid those segments that are under BHC RED (Severe) based on migration patterns or Weather Radar reports. Low-level hazard guidance is available via the Avian Hazard Advisory System (AHAS, http://www.usahas.com/) and the Bird Avoidance Model (BAM, http://www.usahas.com/bam/). Guidance for aircrew actions when the risk from birds is indicated as SEVERE is contained in amplifying squadron instructions. Each squadron duty office should maintain a copy of this data. The following, for briefing purposes, are some general operational recommendations to reduce threats from bird strikes:

A. When practical, reduce low-level flight time. 99% of all bird strikes occur below 2300 feet AGL.

B. Reduce formation flying. The first aircraft can redirect birds into trailing aircraft.

C. Reduced airspeeds will allow birds to be seen sooner and lessen damage in event of a strike.

404. ACTIONS FOLLOWING A BIRD STRIKE.

A. If airborne, complete the damaged aircraft checklist, as applicable, per specific NATOPS procedures.

B. During a takeoff or planned touch and go, pilot at the control/instructor should assess the option of aborting if a bird strike occurs, and if enough runway is remaining to stop. Bird strike damage cannot be accurately assessed in flight and may result in a complex airborne emergency. Only maintenance personnel on the ground can make damage assessments. Several bird strikes that appeared to cause minor damage have proven to be much more substantial and, had aircrews continued the mission, a serious emergency could have resulted. Structural damage, such as a dent in the wing, has led to fuel and hydraulic system failures. Birds lodged in landing gear have prevented gear extension.

C. Aircrew experiencing en route bird strikes should abort the mission when possible.

D. After landing, if you suspect or have had a strike, check the aircraft for damage. Any remains (blood, feathers, etc.) shall be collected by aircrew/maintenance personnel and forwarded to Squadron Safety Officer.

405. BIRD STRIKE REPORTING PROCEDURES. Per OPNAVINST 3750.6R, reporting wildlife/aircraft strikes is an essential requirement of a successful BASH program. Aircrew and maintenance personnel at the squadron level, as well as Flight Support and Crash Crew personnel are required to report wildlife/aircraft strikes and collect wildlife remains, if possible. The following procedures outline how personnel should report a wildlife/aircraft strike.

A. If airborne, inform Control Tower and complete emergency landing, if required. Notify Tower even in the case of a probable strike. Notify the

Tenant Command/Operations Duty Officer of the wildlife/aircraft strike, as soon as practical.

B. After post-flight inspection, preserve any remains (however slight) and place in a clear plastic bag. Forward the bag with bird remains to the Squadron Safety Officer.

C. Report strikes to Tower and Tenant Command /Operations Duty Officer even if no bird remains are found on the aircraft. The BDDT and/or airfield facilities personnel may be able to retrieve the bird on the airfield.

D. The Squadron Safety Officers shall follow up local reporting by entering an online BASH report in WESS via the Navy Safety Center web site www.safetycenter.navy.mil. Both damaging and non-damaging strikes are required to be reported.

E. All wildlife remains collected for identification must be reported to the appropriate Federal and State agencies. All collected avian species covered under the Migratory Bird Treaty Act must be reported through the Station's U.S. Fish & Wildlife Service Depredation/Salvage permit. All station permitting requirements will be performed by the Navy Biologist.

F. Aircrews must also report near misses that involve evasive action or whenever the proximity of the miss is "too close for comfort" to their Squadron Safety Officers, who shall enter the report as a "near miss" online as stated above.

406. COLLECTING WILDLIFE REMAINS. It is necessary to know which wildlife species are problematic so that appropriate risk management measures can be implemented. Therefore, positive identification of the wildlife species is essential. All wildlife remains, either discovered on an aircraft or the airfield, are required to be collected. The following guidelines are provided for wildlife/aircraft strike remains collection and identification.

A. Remove wildlife remains from the aircraft or the airfield, and place in a clear plastic bag, even if it's a moistened towel used to wipe off the blood smear. It does not take much (remains) to identify the bird species.

B. Attach a sheet of paper with the location wildlife was collected, time, and aircraft side number if known to the bag.

C. Collect both damaging and non-damaging wildlife/aircraft strike remains from aircraft.

D. Forward the bag with bird remains to the BASH Program Manager at Hangar 58, Rm. 217.

407. OPERATIONAL LIMITS AND GO/NO-GO CRITERIA. Upon notification that BHC RED (Severe), YELLOW (Moderate), or GREEN (Low) is set, procedures and restrictions for conducting Flight Operations at the airfield shall be IAW Tenant Command SOP.

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CHAPTER 5

LOCAL BIRD SPECIES

501. GENERAL. The following is a summary of birds within the airfield environment. Associated with each is a brief description of how they can be controlled or avoided. Each control measure will require action by one or more tasked organizations as described in Chapter 2. It is very important to know which avian species or airfield attractants are present before control techniques can be effectively applied.

502. NAS CORPUS CHRISTI/NALF WALDRON AND CABANISS ANIMAL HAZARDS.

A. AVIAN SPECIES.

1. Gulls. These birds represent the most significant hazard to aircraft at airports worldwide. Due to their omnivorous feeding habits and preference for flat, open areas to rest, they are commonly found on this airfield. Gulls are most active just after sunrise and before sunset as they move to and from feeding areas. Maintenance of grass height between 7 and 14 inches is critical in reduction of gull numbers. Even with this in effect, gulls may inhabit the airfield, particularly during inclement weather. Persistent harassment using pyrotechnics and bioacoustics is necessary to discourage these birds. Other techniques such as gas cannons, model gulls, radio-controlled model aircraft and even falconry should be considered if available and cost-effective. Poisoning of earthworms and insects (especially grasshoppers) may be accomplished if these invertebrates are found to attract gulls. Do not allow these birds to establish a habit of using the airfield to feed, breed, or rest.

2. Waterfowl (ducks, geese, swans). A distinction must be made between resident and migrating populations. Resident waterfowl are attracted to an area to breed or feed. Ponds, lakes, drainage ditches, etc., may attract these birds, particularly if these areas contain emergent or submerged vegetation for feeding, nesting, or shelter. Steepening ditch and pond banks and removing vegetation will reduce waterfowl numbers. When possible, drainage of water sources should be accomplished. Grain fields may also attract waterfowl in large numbers and should be eliminated. Pyrotechnics, gas cannons, and effigies are all excellent control techniques. Use of live ammunition or opening base areas to waterfowl hunting may also be used for control. Resident birds are most active at dawn and dusk, moving at low altitudes to and from feeding areas. Avoid flying near wildlife refuges, or any ponds, lakes or rivers with known waterfowl concentrations during these times. Migrating waterfowl are particularly dangerous to flight safety due to the large numbers and generally higher altitude of the birds. Large flocks of waterfowl travel along traditional flyways to their breeding and wintering grounds during spring and fall. Huge flocks may stop along the route awaiting favorable weather conditions to continue. Migrating birds are most active from sunset through midnight, with numbers decreasing in the early morning hours. September through February is most hazardous. Avoidance of flying during the evening hours is generally safest. Wintering concentration areas should be avoided.

3. Long-legged Waders (Herons and Egrets). Most of these species are attracted to water where they feed on fish, amphibians, reptiles, and arthropods. Control is best accomplished by eliminating the food sources. Steepening the sides of ditches and ponds and removing emergent vegetation will drastically reduce accessibility to food sources. Pyrotechnics should be used to disperse any birds that do not disperse after habitat modification.

4. Raptors (Hawks, Falcons, Kites, Eagles, Vultures). These birds can be particularly hazardous to aircraft because of their size and widespread distribution over bases and low-level areas. Raptors (particularly vultures) use thermals to their advantage to search for prey. These birds become active during mid-morning and remain aloft until late afternoon. Avoid areas with thermal-generating terrain such as ridgelines, rolling hills, water. Landfills are particularly attractive to soaring vultures. In the fall, raptors migrate by day to areas of heavy winter concentrations in the southern states. These birds can be controlled by removal of dead animals and removal of dead trees and other perching sites on the airfield. Pyrotechnics may be used to frighten raptors from the airfield.

5. Grouse, Quail, and Pheasants. These game birds are most effectively controlled through proper grass-height management. Do not allow grass to exceed 18 inches and eliminate all weeds and brush patches on the airfields, particularly if the plants are seed producing. Pyrotechnics, gas cannons, live ammunition or periodic hunts can effectively disperse these birds. The depredation of these birds outside the normal hunting season requires special permits from the State Fish & Game Agency.

6. Sandpipers/Shorebirds. The most significant hazard from these birds occurs when large numbers flock in tight groups, particularly during migration and along coastlines. Many of these species such as Sanderlings and Dunlins may nest on airfields in the Fall and Winter. To control these birds, proper grass height management must be observed. Water in puddles should be eliminated and ditch banks steepened to limit access to these birds. Other species such as Killdeer are quite adept at avoiding aircraft. Pyrotechnics and bioacoustics can be used for all species and some respond well to falconry.

7. Terns. These are fish eating, gull-like birds in coastal areas and on some major river systems and lakes. Avoid flying near areas where these birds may be active, such as nesting colonies or piers in coastal areas. Remove the food source if these birds pose a significant hazard.

8. Owls. Most owls are nocturnal and attracted to rodents as a food source. Rodent control may be necessary on the airfield. Limit the number of perch sites by removing perch sites such as unnecessary fence posts and dead trees. Avoid over-flying landfills at night to reduce hazards from owls.

9. Goatsuckers (Nighthawks), Whippoorwills, etc. These birds are active particularly at sunset when insects are abundant. Little can be done to limit their number other than insect control. Avoid flying at times when these birds are abundant, particularly near lakes, streams, or other areas with large insect populations.

10. Woodpeckers. Woodpecker strikes should be extremely rare. These birds are common in forested areas, but generally remain below canopy level. On the airfield, elimination of trees should eliminate strikes with these birds. Migratory birds may be encountered, but are rarely struck.

11. Flycatchers. These birds are present on airfields to feed on insects. Strikes are infrequent, but should not be overlooked. Control is best accomplished by control of insects and removal of perch sites such as fence posts, tree limbs, bushes, high spots on the field, etc.

12. Horned Larks. These birds are very difficult to control. They are attracted by bare spots such as along runway sides, where they eat weed seeds and insects. The best defense against these birds is a thick, uniform grass with no bare spots. Consider coating bare spots, particularly along runways, with oil-base or asphalt cover. Pyrotechnics can be used, but these birds will tend to fly only short distances and settle down. Persistence is the key to success with this species.

13. Swallows and Swifts. These birds eat insects in flight and are commonly found above airfields. Insect control will reduce Swallow numbers and discouragement of nesting will further decrease numbers. Remove mud nest from hangars, etc., with a hose as the birds begin nesting and when nesting is complete. Nesting in hangars can be discouraged by harassing the birds as they work on building. If Swallows are noted resting on runways or taxiways, use pyrotechnics to disperse them. Nest removal from hangars shall be coordinated with the Environmental Division of Public Works. Nest removal is covered by a permit with the U.S. Fish & Wildlife Service.

14. Crows and Ravens. These omnivorous birds are common in open areas and around landfills and solid waste transfer stations. These birds may occur in large flocks particularly at sunset as they return to roost sites. Proper grass-height management will reduce population numbers. Remove any known roost sites or thin individual roost trees. Landfills and transfer stations must be operated in a manner to discourage these birds. Bioacoustics, pyrotechnics, and lethal methods can be used to frighten and remove these birds if they occur on the airfield.

15. Blackbirds, Grackles, Cowbirds, and Starlings. These birds can be particularly hazardous because they frequently occur in huge flocks, sometimes in the millions. Blackbirds and Starlings are attracted to flat, open areas to feed, rest, or stage/pre-roost. Maintenance of grass height between 7 and 14 inches is the best method of reducing airfield Blackbird and Starling numbers. Blackbirds and Starlings respond well to an intense frightening program using bioacoustics, pyrotechnics, and lethal methods.

16. Meadowlarks. These birds occur on nearly every airfield and are attracted to grasslands and low weeds. Eliminate broad-leafed weeds and maintain grass height at 7-14 inches. Elimination of suitable perching sites, such as fence posts and brush will also aid in population reduction. Pyrotechnics can be used, but Meadowlarks usually only fly a short distance before settling down again. Persistence is the key to success.

17. House Sparrows. These birds are not frequently struck by aircraft, but are common pests around structures. House Sparrows often nest in hangars, dense shrubs, and trees. These birds are not protected by law and may be destroyed without permit. Toxic bird perches may be used to remove house sparrow from hangars or other structures. Frightening techniques are usually ineffective against these birds.

18. Bioacoustics and Pyrotechnics. Other methods should be used to supplement this program as necessary. Starlings are not federally protected and may be removed without permits. Permits are required for other species. Occasional shooting of birds will reinforce other frightening techniques. Poisoning or trapping may also be considered with USDA Wildlife Services assistance. If these birds occur in hangars, toxic bird perches are recommended to eliminate the problem. Avoid at all costs flying near known Blackbird and Starling roosts, especially at sunrise and sunset and during spring and fall migration.

B. MAMMALIAN SPECIES. While concern is mostly centered on birds, several mammalian species also pose threats to flight operations and must be considered. Close coordination with the station Integrated Natural Resources Management Plan is necessary to reduce this type of hazard.

1. Coyotes. These animals are attracted to airfields by rodents, rabbits and other food sources. Dens may be found in banks, culverts, or other suitable areas. Rodent control will reduce the numbers of these animals. Pyrotechnics can be used to frighten these species and occasional shooting and trapping of individual animals or recurrent pests will also reduce the hazard.

2. Rabbits. In addition to direct hazards to aircraft these animals often attract raptors. Proper grass management will reduce the numbers of these animals on airfields. Poisoning can also be effective for reduction of populations.

3. Rodents. These animals attract raptors. Control by maintaining a uniform turf at the proper heights. Rodenticides may be used in some cases.

4. Deer. This mammalian species poses the greatest threat to aircraft due to its size and preferred nocturnal activities. Control techniques include modifying perimeter fences to become deer proof and selected shooting of problem individuals. Permits are required from the State Fish & Game Agency.

5. Javalina. This mammalian species poses the greatest threat to aircraft due to its size and preferred nocturnal activities. Control techniques include modifying perimeter fences to become deer proof and selected shooting of problem individuals. Permits are required from the State Fish & Game Agency.

6. Feral Pig. This mammalian species poses the greatest threat to aircraft due to its size and preferred nocturnal activities. Control techniques include modifying perimeter fences to become deer proof and selected shooting of problem individuals.

APPENDIX A

BASH SELF-INSPECTION CHECKLIST

1. Is the BASH Plan current and readily accessible for your reference?

2. Is the Station Instruction current and readily accessible for your reference?

3. If the base has a flying mission, has a BASH reduction program and written plan been established?

4. Has the BASH Plan been reviewed biennially?

5. Are changes and annual reviews posted to the plan?

6. Does the program establish a Bird Hazard Working Group (BHWG) or similar organization?

7. Are base agencies such as Safety, Public Works, Environmental, and Air Operations assigned responsibilities for the BASH program?

8. Are the base Commanding Officer and/or Wing Commander involved in the BASH program?

9. Does the BHWG meet at least quarterly as a separate meeting or along with another meeting containing the same members?

10. Are BASH topics included in flight safety briefings?

11. Are posters, pictures, maps, etc., related to BASH posted in the aircrew briefing areas, safety bulletin boards, and base operations flight planning areas?

12. Are local bird problems documented?

13. Are both damaging and non-damaging bird strikes recorded?

14. Are all non-damaging bird strikes reported to COMNAVSAFECEN, 375 A Street, Norfolk, VA 23511-4393?

15. Are all damaging bird strikes reported with COMNAVSAFECEN as an addressee?

16. Are bird remains (feathers, beaks, and feet) regularly collected from a bird strike?

17. Are bird remains sent to a local authority (U. S. Fish and Wildlife Service, university, or Ornithologist) for identification?

18. Is the bird strike information tracked to facilitate the identification of trends (for example: Type of bird, route, time of day, type of aircraft)?

19. As part of the bird awareness program, do you have a bird identification book?

20. Are daily surveys taken of the airfield and surrounding area to observe potential and actual bird hazards?

21. Are records of daily observations kept in order to establish trends?

22. During the surveys, are areas like standing water, food sources, or areas for protection noted?

23. Is the vegetation on the airfield particularly attractive to birds?

24. Does the mowing or guideline contract specify that the grass be maintained at a height of 7-14 inches?

25. Does the base practice control burning?

26. Are trees or shrubs located within 1,000 feet of the runways removed per local BOS contract?

27. Are these trees or shrubs attractive to birds?

28. Are birds attracted to taxiways or active runways?

29. Has it been determined what types of birds are attracted to the taxiways and runways?

30. Are the areas with water (ponds, lakes, swamps, etc.) attractive to birds?

31. Are the birds feeding in these wet areas?

32. Has it been determined what types of birds are attracted to these wet areas?

33. Do wet areas contain vegetation along their perimeters?

34. Do the wet areas contain fish or amphibians (frogs or salamanders)?

35. Are these other areas near the runways that attract birds (horse stables, recreation areas, golf courses, etc.)?

36. Has it been determined what is attracting the birds?

37. Has it been determined what type of bird is being attracted to these other areas?

38. Does farming in the surrounding area of the base attract birds?

39. Is the base notified by the farmer of the plowing times in order to alter operations?

40. Does the base out lease cropland on adjacent areas?

41. Does the lease provide for restrictions concerning BASH?

42. Are these garbage dumps, landfills, or sewage lagoons in the area near the base?

43. Is the garbage dump, landfill, or sewage lagoon covered daily with dirt, wire, or netting?

44. Does the garbage dump, landfill, or sewage lagoon attract birds?

45. Are there other areas attractive to birds near the base (for example: lakes, ponds, swamps, cemeteries and wildlife areas)?

46. Have aircraft hangars and buildings been inspected for pest birds?

47. Do bird droppings cause problems for equipment or aircraft?

48. Is equipment covered and aircraft cockpits closed each night to provide protection against bird droppings?

49. Are hangar doors left open all the time?

50. Is the cost of cleaning up the bird droppings and any damage incurred less than any type of solution to the problem?

51. Is there an active hunting club on base?

52. Are the game birds and deer controlled so they do not interfere with flying operations?

53. Does the control tower warn operations and pilots of birds in the airdrome?

54. Is there a designated bird control team that actually manages and controls birds and maintains bird dispersal equipment and permits?

55. Is the control team actively patrolling the airdrome?

56. Does the BHWG suggest ways of altering the situation or changing the habitat to discourage birds from the areas before using elimination or reduction techniques?

57. Does the BASH program meet the needs of the mission as a whole?

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